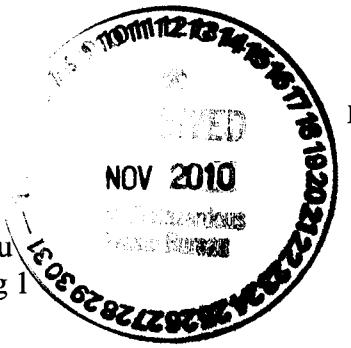
General

Los Alamos
NATIONAL LABORATORY
EST.1943

Environment, Safety, Health & Quality
P.O. Box 1663, K491
Los Alamos, New Mexico 87545
(505) 667-4218/FAX: (505) 665-3811

National Nuclear Security Administration
Los Alamos Site Office, A316
3747 West Jemez Road
Los Alamos, New Mexico 87545
(505) 667-5105/FAX (505) 667-5948

ENTERED



Date: November 9, 2010
Refer To: ESH&Q-10-059
LAUR: 10- 07598

Mr. Tim Hall
New Mexico Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Dear Mr. Hall:

SUBJECT: INFORMATION REQUEST MIXED TRANSURANIC CHARACTERIZATION ACTIVITIES LOS ALAMOS NATIONAL LABORATORY EPA ID# NM 0890010515

This letter responds to an October 8, 2010 *Request for Information* sent to the U.S. DOE/NNSA and Los Alamos National Security (collectively, the Permittees) regarding mixed waste characterization activities conducted at the Los Alamos National Laboratory. You requested responses to fourteen (14) specific items related to mixed waste characterization activities conducted at the Los Alamos National Laboratory, to be furnished no later than November 12, 2010.

As discussed during a phone conversation with Environmental Stewardship Division (ENV-DO) staff on November 9, 2010, the New Mexico Hazardous Waste Bureau (NMED-HWB) is granting an extension for responses to questions 1, 2, 3, and 6. These items will require additional time to respond and necessitate a thorough review in order to provide a complete and accurate factual response. These extended responses will be submitted to NMED-HWB on or before December 13, 2010.

If you have questions, please contact Mark Haagenstad of Los Alamos National Security at (505) 665-2014 or George Henckel of the Department of Energy Los Alamos Site Office at (505) 606-0960.

Sincerely,

Cynthia Dutro

J. Chris Cantwell
Associate Director
Environment, Safety, Health and Quality
Los Alamos National Security, LLC

Sincerely,

George J. Rael
Manager
Los Alamos Site Office
National Nuclear Security Administration

JCC:KS:MH/lm

Enclosure: a/s

Cy: Art Vollmer, NMED/HWB, Santa Fe, NM, w/enc.
Ed Ziemianski, DOE/CBFO, Carlsbad, NM, w/o enc.
George J. Rael, LASO-EPO, w/o enc., A906
Gene Turner, LASO-EPO, w/enc., A316
George Henckel, LASO-EPO, w/enc., A316
Michael Graham, ADEP, w/o enc., M991
Michael B. Mallory, PADOPS, w/o enc., A102
J. Chris Cantwell, ADESHQ, w/o enc., K491
Denny Hjeresen, ENV-DO, w/o enc., (E-File)
Mark Haagenstad, ENV-RCRA, w/enc., (E-File)
Peggy Powers, ENV-ES, w/enc., J978
ADESHQ File, w/o enc., K491
ENV-RCRA File, (10-220), w/enc., K490
IRM-RMMSO, (U1002328), w/enc., A150

Information Request No. 4

Section 3.7.1 of the Interface Document states that the WDP Production Control Manager uses CCP's AK Tracking Spreadsheet to manage the control, movement, and tracking of containers through the CCP characterization process. State whether the WDP Production Control Manager is the LANL Permittees' employee responsible for ensuring that waste identified in CCP's AK Tracking Spreadsheet as belonging to a mixed TRU WSPF is managed as mixed TRU waste. If not, identify the title of the LANL Permittees' employee who is responsible.

LANL Response

The WDP Production Manager is not responsible for "ensuring that waste identified in CCP's AK Tracking Spreadsheet as belonging to a mixed TRU WSPF is managed as mixed TRU waste." No LANL Permittees' employee is responsible for the job duties described in this request. The LANL Permittees manage their mixed TRU waste in accordance with the requirements of LANL's hazardous waste facility permit, and applicable generator requirements under 40 CFR Part 262. These requirements include the obligation to perform a hazardous waste determination under 40 CFR § 262.11. LANL Permittees do not perform hazardous waste determinations or manage their mixed TRU waste based on CCP's AK Tracking Spreadsheet or requirements under the WIPP facility permit applicable to TRU waste.

Information Request No. 5

Identify any containers identified in CCP's AK Tracking Spreadsheet as belonging to a mixed TRU WSPF that are not currently in permitted or interim status storage. Identify the current location of any such containers.

LANL Response

The information sought in this request is based on CCP's AK Tracking Spreadsheet. The AK Tracking Spreadsheet, however, is not owned or controlled by LANL Permittees. CCP is responsible for and has control over its AK Tracking Spreadsheet, including all information on containers and any changes to this document. Although LANL Permittees have access to the AK Tracking Spreadsheet through a web-based tool, this spreadsheet is controlled and continuously updated and revised by CCP. Because the spreadsheet is continually revised, any information that Permittees could provide based on a review of the spreadsheet on a given date and time, might become inaccurate upon revision of the spreadsheet. As stated above, Permittees do not control the information in the Spreadsheet. As a result, Permittees cannot make the determination requested. As stated in Permittees' Answer to Information Request No.4, LANL Permittees do not manage their TRU waste based on CCP's AK Tracking Spreadsheet. LANL Permittees store their mixed TRU waste in accordance with LANL's hazardous waste facility permit.

Information Request No. 7

Provide Hazardous Waste Manifests for the following shipments of mixed TRU Waste from LANL to WIPP:

a. LA100046 (manifest 001509746JJK)
b. LA100059 (manifest 001509049JJK)
c. LA100083 (manifest 001509100JJK)

LANL Response

These documents are attached. Please note that the manifest associated with LA100046 is 001509029JJK, and not 001509746JJK. We have attached the correct manifest in response to this request.

Information Request No. 8

For the waste containers listed on the above manifests, identify all containers that the LANL Permittees have historically managed either as non-mixed TRU waste or as non STP-covered mixed TRU waste.

LANL Response

The hazardous waste manifests provided under Information Request No. 7 do not list specific waste containers. However, the following information is provided for the waste containers associated with each of the above manifests (see the table attached as 8.1):

a. LA100046 (001509029JJK): 28 55-Gallon drums; of which 4 were managed based on LANL generator information as non-mixed TRU waste and are not STP-covered. The remaining drums are mixed TRU waste and STP-covered.

b. LA100059 (001509049JJK): 42 55-gallon drums; of which 13 were managed based on LANL generator information as non-mixed TRU waste and are not STP-covered. The remaining drums are mixed TRU waste and STP-covered.

c. LA100083 (001509100JJK): 42 55-gallon drums; of which 10 were managed based on LANL generator information as non-mixed TRU waste and are not STP-covered. The remaining drums are mixed TRU waste and STP-covered.

Information Request No. 9

Provide contact information for the following individuals:

a. WDP Project Director (Interface Document Section 3.2)
b. WDP Production Control Manager (Interface Document Section 3.7)
c. The LANL Permittees' manager responsible for ensuring mixed TRU waste is managed and stored in compliance with RCRA and LANL's hazardous waste facility permit.
d. The LANL Permittees' manager responsible for review and approval of hazardous waste manifests for shipments of mixed TRU waste from LANL to WIPP.

LANL Response

- 9.a. Kathryn Johns-Hughes, Waste Disposition Project Director

  Address: Los Alamos National Laboratory
  P.O. Box 1663
  Los Alamos, NM 87545
  MS J910
  Phone: 664-0589

- 9.b. Mark Shepard, Strategic Planning & Production Control Program Manager

  Address: Los Alamos National Laboratory
  P.O. Box 1663
  Los Alamos, NM 87545
  MS J595
  Phone: 665-6878

- 9.c Judith Huchton, WDP Facility Operations Director (FOD)

  Address: Los Alamos National Laboratory
  P.O. Box 1663
  Los Alamos, NM 87545
  MS J910
  Phone: 667-8675

- 9.d Gilbert Torres, Packaging and Transportation Group Leader

  Address: Los Alamos National Laboratory
  P.O. Box 1663
  Los Alamos, NM 87545
  MS A194
  Phone: 665-8628

Information Request No. 10

Provide all relevant procedures regarding the LANL Permittees' activities related to sections 3.2, 3.7.1, 3.7.4 and 4.5.4[B] of the Interface Document.

LANL Response

Section 3.2

There are no procedures regarding the LANL Permittees' activities related to section 3.2

Section 3.7.1

The following three LANL procedures are relevant to 3.7.1 of the Interface Document: *(1) EP-AREAG-WO-DOP-0209, R.10 - WDP TA-54 Area G TRU Waste Receipt, Storage, and Transfers, (2) Procedure P151-1 - LANL Packaging and Transportation Program Procedure, and (3) EP-DIV-AP-0107 R.1 - WDP TRU Waste Container Management Operations* (see attachment 10.1). These LANL procedures are used to manage the control, movement and tracking of containers through the CCP characterization process, and use the AK Tracking Spreadsheet as a reference only.

Section 3.7.4

The following two LANS procedures are relevant to 3.7.4 of the Interface Document: (1) *EP-AREAG-WO-DOP-0209, R.10 - WDP TA-54 Area G TRU Waste Receipt, Storage, and Transfers and* (2) *EP-DIV-AP-0107 R.1 -WDP TRU Waste Container Management Operations* (see attachment 10.2).

Section 4.5.4[B]

The following three LANL procedures are relevant to 4.5.4[B] of the Interface Document: *(1) EP-AREAG-WO-DOP-0209, R.10 - WDP TA-54 Area G TRU Waste Receipt, Storage, and Transfers, (2) EP-DIV-AP-0107 R.1 - WDP TRU Waste Container Management Operations, and (3) EP-DIV-DOP-0103, R.0 - WDP TRU Waste Container Labeling* (see attachment 10.3). These LANL procedures are used to perform site container management, but are not used to verify that containers are included in the AK Tracking Spreadsheet for characterization by CCP.

Information Request No. 11

Provide all relevant procedures regarding the LANL Permittees' activities related to management and storage of containers identified in CCP's AK Tracking Spreadsheet as belonging to a mixed TRU WSPF.

LANL Response

There are no LANL procedures regarding the LANL Permittees' activities as described in this information request (see Answer to Information Request No. 4).

Information Request No. 12

Provide all relevant procedures regarding the LANL Permittees' activities related to review and approval of hazardous waste manifests for shipments of mixed TRU waste from LANL to WIPP.

LANL Response

This document is attached.

Information Request No. 13

Provide "Statement of Work for Characterization of LANL TRU Waste Contact Handled and Remote Handled," which describes the assistance to be provided to CCP by the LANL Permittees, referenced in Section 1.0 of the Interface Document.

LANL Response

This document is attached.

Information Request No. 14

Provide the following LANL Permittees' documents referenced in Attachment 3 of the Interface Document:

a. LIR 404-00-02.4, General Waste Management Requirements
b. LIR 404-00-03.1, Hazardous and Mixed Waste Requirements
c. LIR 404-00-05.4, Managing Radioactive Waste
d. IPP 525.2, Packaging and Transportation
e. EP-DIR-SOP-4001, Document Control

LANL Response

These documents are attached.

Information Request No. 7

Attachment

1. LA100046 (manifest 001509029JJK)
2. LA100059 (manifest 001509049JJK)
3. LA100083 (manifest 001509100JJK)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
NM0890010515	1	(505)667-6211	001509049 JJK

GENERATOR

5. Generator's Name and Mailing Address
LOS ALAMOS NATIONAL SECURITY, LLC ON BEHALF OF U.S. DOE
TA-54 WEST, BLDG. 38
LOS ALAMOS NM 87545
Generator's Phone: (505)665-6037

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
VISIONARY SOLUTIONS LLC
U.S. EPA ID Number TXR000023190

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
U.S. DEPT. OF ENERGY C/O WASHINGTON TRU SOLUTIONS
30 MILES EAST OF CARLSBAD ON JAL HWY
CARLSBAD NM 88221
Facility's Phone: (575)234-8457
U.S. EPA ID Number NM4890139088

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
RQ	1. UN3328, Waste, Radioactive Material, Type B(U) Package, Fissile, 7, Am241 Pu238 Pu239 Pu240, 1.233 TBq Solid Elemental Radioactive Yellow-II, TI=0.4, CSI=0.0 USA/9218 B(u)F-96, TP-193	1	CM	2601	K	D004	D005	D006
						D007	D008	D009
RQ	2. UN3328, Waste, Radioactive Material, Type B(U) Package, Fissile, 7, Am241 Pu238 Pu239 Pu240, 1.658 TBq Solid Elemental Radioactive Yellow-II, TI=0.4, CSI=0.0 USA/9218 B(u)F-96, TP-127	1	CM	1349	K	D004	D005	D006
						D007	D008	D009
RQ	3. UN3328, Waste, Radioactive Material, Type B(U) Package, Fissile, 7, Am241 Pu238 Pu239 Pu240, 2.617 TBq Solid Elemental Radioactive Yellow-II, TI=0.4, CSI=0.0 USA/9218 B(u)F-96, TP-195	1	CM	1742	K	D004	D005	D006
						D007	D008	D009

14. Special Handling Instructions and Additional Information
SHIPMENT # LA1000S9, LANL POC (505)-699-7526 FRG #165, TRACTOR # V-34, TRAILER # V-366
GROSS WEIGHT IN KILOGRAMS: TP#193 = 8861 KG, TP#127 = 7144 KG, TP#195 = 7082 KG

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ONESIMO A. MARTINEZ
Signature
Month Day Year: 05 27 11

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Lance Taylor
Signature
Month Day Year: 05 27 11

Transporter 2 Printed/Typed Name
Signature
Month Day Year

GNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132	H132	H132	

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name
Signature
Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	[illegible]	1	(505)667 6211	001509100 JJK

GENERATOR

5. Generator's Name and Mailing Address

LOS ALAMOS NATIONAL SECURITY, LLC ON BEHALF OF U.S. DOE
TA-54 WEST, BLDG. 38
LOS ALAMOS NM 87545
Generator's Phone: (505)665-4657

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: VISIONARY SOLUTIONS, LLC — U.S. EPA ID Number: TXR000122130

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address

U.S. DEPT OF ENERGY C/O WASTREN PRO SOLUTIONS
30 MILES EAST OF CARLSBAD ON HWY
CARLSBAD NM 88221
Facility's Phone: (575)234-8457

U.S. EPA ID Number: NM4890139088

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
NO	1. UN3328, Waste, Radioactive Material, Type B(U) Package, Fissile, 7, Am241 Pu238 Pu239 Pu240, 0.2749 TBq Solid Elemental Radioactive Yellow-II, TI=0.4, CSI=0.0 USA/9218 B(U)F-96, TP-183	1	CM	2082	K	D004	D005	D006
						D007	D008	D009
NO	2. UN3328, Waste, Radioactive Material, Type B(U) Package, Fissile, 7, Am241 Pu238 Pu239 Pu240, 1.530 TBq Solid Elemental Radioactive Yellow-II, TI=0.4, CSI=0.0 USA/9218 B(U)F-96, TP-132	1	CM	1429	K	D004	D005	D006
						D007	D008	D009
NO	3. UN3328, Waste, Radioactive Material, Type B(U) Package, Fissile, 7, Am241 Pu238 Pu239 Pu240, 0.5404 TBq Solid Elemental Radioactive Yellow-II, TI=0.5, CSI=0.0 USA/9218 B(U)F-96, TP-197	1	CM	1156	K	D004	D005	D006
						D007	D008	D009
	4.							

14. Special Handling Instructions and Additional Information

SHIPMENT # LA000084, LANL POC (505)-699-7526, PHG #165, TRACTOR # V-12, TRAILER # V-156
GROSS WEIGHT IN KILOGRAMS TP#183 = 7973 KG, TP#132 = 7250 KG, TP#197 = 8961 KG

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
ERNEST A. MARTINEZ		05	30	13

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
Lance Taylor		05	30	13
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name	Signature	Month	Day	Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
NM4890139088	1	(505)667-6211	001503023 JJK

GENERATOR

5. Generator's Name and Mailing Address
LOS ALAMOS NATIONAL SECURITY, LLC ON BEHALF OF U.S. DOE
TA-54 WEST, BLDG. 38
LOS ALAMOS NM 87545
Generator's Phone: (505)665-8057

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
VISIONARY SOLUTIONS, LLC
U.S. EPA ID Number
ENROOAD13K

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
U.S. DEPT OF ENERGY C/O WASHINGTON TRU SOLUTIONS
30 MILES EAST OF CARLSBAD ON 31 HWY
CARLSBAD NM 88221
Facility's Phone: (575)234-8457
U.S. EPA ID Number
NM4890139088

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
RQ	1. UN2916, Waste, Radioactive Material, Type B(U) Package, Fissile Excepted, 7, AM241 PU238 PU239 PU240, 1.721 TBq, Solid, Elemental, Radioactive Yellow-II, TI= 1.0, USA/9218 B(U)F-96, TP 171	1	CM	2723	K	0004	0005	0006
						0007	0008	0009
RQ	2. UN2916, Waste, Radioactive Material, Type B(U) Package, Fissile Excepted, 7, AM241 PU238 PU239 PU240, 1.836 TBq, Solid, Elemental, Radioactive Yellow-II, TI= 0.4, USA/9218 B(U)F-96, TP-171	1	CM	2732	K	0004	0005	0006
						0007	0008	0009
	3.							
	4.							

14. Special Handling Instructions and Additional Information
SHIPMENT # 1520000, LANL POC (505)-665-7466, ERG #163, TRACTOR # V-15, TRAILER # V-54
PACKS WEIGH IN KILOGRAMS (PK#1/4=8609 KG, (PK#1/4=8609 KG

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ISAAC LUCAS
Signature
Month Day Year

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name
Signature
Month Day Year

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H040	H040		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a

Printed/Typed Name
Signature
Month Day Year

Information Request No. 8

Attachment:

1. Table (Container Identification)

Attachment 8.1

Manifest No	Container Identification
001509029JJK	83742
001509029JJK	83829
001509029JJK	83843
001509029JJK	83863
001509049JJK	83777
001509049JJK	84068
001509049JJK	84072
001509049JJK	84096
001509049JJK	84108
001509049JJK	84119
001509049JJK	84156
001509049JJK	84158
001509049JJK	84162
001509049JJK	84325
001509049JJK	84486
001509049JJK	84619
001509049JJK	84853
001509100JJK	59680
001509100JJK	84396
001509100JJK	84989
001509100JJK	85009
001509100JJK	85240
001509100JJK	85252
001509100JJK	85286
001509100JJK	85480
001509100JJK	85596
001509100JJK	S851837

[redacted]tion Request No. 10

[redacted]Attachment 10.1

[redacted]Attachment 10.2

[redacted]Attachment 10.3

Information Request No. 10

Attachment 10.1

1. *EP-AREAG-WO-DOP-0209, R.10 - WDP TA-54 Area G TRU Waste Receipt, Storage, and Transfers*
2. *Procedure P151-1 - LANL Packaging and Transportation Program Procedure*
3. *EP-DIV-AP-0107 R.1 - WDP TRU Waste Container Management Operations*

EP-AREAG-WO-DOP-0209. R.10

WDP TA-54 Area G TRU Waste Receipt, Storage, and Transfers

Effective Date: 9/7/10

Hazard Class:	☐	Low	☒	Moderate	☐	High/Complex	
Usage Mode:	☐	Reference	☐	UET	☒	Both Reference and UET	

The Responsible Manager has determined that the following organizations' review/concurrence is required for the initial document and for major revisions a same type and level review is required. Review documentation is contained in the Document History File:

WDP QA	WDP Engineering
WDP SME	WDP IH
WDP OPS	Rad Con

Responsible Manager, Organization

Mike Romero, TRU Ops Mgr.	/ 106733	/	/ 9/7/10
Name (print)	Z#	Signature	Date

Working Copy / Information Only (circle one)

Initials / Date: ____ / ____

Classification Review: ☐ N/A ☒ Unclassified ☐ UCNI ☐ Classified ____

Michael D. Garcia	109943	/	/ 9/7/10
Name (print)	Z#	Signature	Date

This document fully satisfies the activity-specific information requirements of P300, Integrated Work Management, in order to systematically describe the work activity, the associated hazards, and the controls that **MUST** be employed to mitigate the risks.

REVISION HISTORY

Document No./Revision No.	Issue Date	Action	Description
DOP-CST14G-009, R.1	August 1996	New document	
DOP-54G-016, R.1	October 1997	Major Revision	Annual Review
DOP-54G-016, R.2	December 1998	Major Revision	Annual revision and incorporation of text covering new operations supporting TWISP and TRU certification activities.
DOP-54G-016, R.2.1	December 1998	Emergent Change	Changes to Section 9.1.2, Steps 6, 8, and 9.
DOP-54G-016, R.3	October 2000	Major revision	Annual review. Revised forms FMU64-F169 and F-183.
DOP-SWO-016, R.4	December 2003	Major revision	Annual review. Deletion of text covering TWISP operations and update of text covering TRU certification and storage operations to reflect current operational practices. Precautions for the manual handling of drums added. References updated. Revised form FMU6-F169, removed FMU64-F183, and changed FMU64-F031 to FMU6-F031.
DOP-SWO-016, R.5	June 2004	FM-directed action	Updated references to new DSA throughout document and added TSR requirements for clarification. Removed form FMU6-F169, R.2. Revised form FMU6-F031, R.1. to FMU6-F031, R.2.
DOP-SWO-016, R.5.1	June 2004	ICN	Replaced Appendix A with new set of work instruction slides. This ICN was made to Revision 5 after Revision 5 was authorized but before it was effective. Rev 5 will therefore never have been posted.
DOP-SWO-016, R.5.2	July 2004	ICN	Changed DSA limit from 133,880 PE-Ci to 150,000 PE-Ci and clarified when to double-band drums. This ICN was made to Revision 5.1 after Revisions 5 and 5.1 were authorized but before they were effective. Therefore, revisions 5 and 5.1 will never have been posted.

REVISION HISTORY (continued)

Document No./Revision No.	Issue Date	Action	Description
DOP-SWO-016, R.6	January 2005	Major revision	Clarifications made throughout procedure as a result of restart walkdowns. Incorporation of new TRU Qualification Standards. Addition of FMU6-F589 "Solid Waste Operations Inspection Check List for Forklifts."
TRU-DOP-0403, R.0	April 2005	Revision	Renumbered and corrected organizational reference consistent with reorganization. Revised to reflect AP-WFM-002, "Technical Safety Requirements (TSRs) for Technical Area 54, Area G," R.7 MAR inventory limit change.
TRU-DOP-0403, R.0.1	August 2005	Interim Change	Changes are marked with change bars. Clarifications to implement best management practices were added to procedural steps. No changes were made to forms.
TRU-DOP-0403, R.0.2	September 2005	Interim Change	Change is marked with a change bar. Caution box added below first paragraph in Precautions and Limitations.
TRU-DOP-0403, R.0.3	November 2005	Interim Change	Change is marked with a change bar. Corrected typographical error and added the following sentence to item 7, page 8: "The PE-Ci content for each container is determined using the scanning equipment."
TRU-DOP-0403, R.0.4	May 2006	Interim Change	Section 4.1, Item 2 inserted "Due to weight variations of drums, only ONE pallet of banded drums **SHALL** be transported at a time to prevent dropping drums." Renumbered remaining items.
TRU-DOP-0403, R.1	September 2007	Minor Revision	Updated group names/titles and reference citations.
TRU-DOP-0403, R.2	Training Only	Major Revision	Revise document for the implementation of ABD-WFM-002 R.0.18, *Technical Safety Requirements (TSRs) for Technical Area 54, Area G.*

REVISION HISTORY (continued)

Document No./Revision No.	Issue Date	Action	Description
EP-AREAG-WO-DOP-0209 R 0	Training Only	Major Revision	Incorporate EP-TRU-DOP-0702, TRU-DOP-0708, TRU-DOP-0403 and AREA G WO-DOP-0208 into one procedure. Add Mar Limits, Revised JHA requirements, supersede EP-AREAG-WO-DOP-0208 TA-54 Area G TRU Waste Transfers, EP-TRU-DOP-0702, and TRU-DOP-0403. Also cancels TRU-SO-0401.
EP-AREAG-WO-DOP-0209 R 1	Training Only	Major Revision	Revise procedure to incorporate controls for preventing the incorrect waste container from being handled and make editorial corrections as necessary. This revision incorporates portions of TRU-DOP-0708, but does not supersede this document. This revision does not introduce any new hazards. This revision is a total rewrite and revision bars have been omitted.
EP-AREAG-WO-DOP-0209, R.2	Training Only	Major Revision	Revise procedure to delete the note in front of Step 8.1[1]. Delete Step 9.2[1] and provide a note explaining the option of temporarily placing waste containers in an alternate location until they may be moved to the staging area north of Transportainers 545 and 546. Make editorial corrections such as updating step numbers on attachments and adding instructions to ensure that prerequisite actions have been completed. Rearrange the steps in Section 11 to be create a better sequence of events. This revision does not introduce any new hazards.
EP-AREAG-WO-DOP-0209, R.3	September 30, 2009	Major Revision	Revise procedure to subdivide Sections 10 and 11 and rearrange step sequence to better accommodate the use of the ConOps Reader/Worker Method for the verification of TRU waste containers as they are loaded onto a transport vehicle. Make editorial corrections as necessary. This revision does <u>not</u> introduce any new hazards.

REVISION HISTORY (continued)

Document No./Revision No.	Issue Date	Action	Description
EP-AREAG-WO-DOP-0209, R.4	September 12 2009	Major Revision	Revise procedure to remove references to TA-54-412 and make editorial corrections associated with the removal (e.g., renumbering). This revision does not introduce any new hazards.
EP-AREAG-WO-DOP-0209, R.5	Training Only	Major Revision	Revise procedure to add restrictions for staging waste containers in Transportainer 545 and 546 in accordance with CALC-07-54-000-010-0002-M-R-0. Make editorial corrections as necessary such as deleting the word "Surveillance" from the title of Attachment 2 since the attachment is not used to satisfy a surveillance requirement (SR). This revision does not introduce any new hazards.
EP-AREAG-WO-DOP-0209, R.6	April 22, 2010	Minor Revision	Make editorial corrections correction to Section 9.2 in order to reverse Steps [9] and [10]. This revision does not alter the original purpose, scope, or intent of the original procedure and is needed since the scanning cannot take place with the transportainer door closed. This revision does not introduce any new hazards. The original approved Revision 6 to this procedure has been changed to Revision 7 because this revision must be implemented to allow operations to continue and the original Revision 6 cannot be implemented until an implementation verification review has been completed.
EP-AREAG-WO-DOP-0209, R.7	Training Only	Major Revision	Revise procedure to incorporate the TA-54 Area G TSR Page Change for allowing transuranic waste to be stored in Building TA-54-412 up to a value of 56 PE-Ci. Make editorial corrections as necessary as necessary. This revision does not introduce any new hazards.

REVISION HISTORY (continued)

Document No./Revision No.	Issue Date	Action	Description
EP-AREAG-WO-DOP-0209, R.8	May 20, 2010	Major Revision	Revise procedure to identify those steps that inspect for a filtered vent as safety basis related. Change the definition of an unvented container to 25% LFL and 8,000 ppm VOC plus the associated instrumentation tolerances in accordance with ABD-WFM-002. Add instructions to inspect for a filtered vent before receiving a waste container internally such as from LLWD. Change dome reference to structure in order to accommodate TRU storage in TA-54-412. Make editorial corrections as necessary. This revision does not introduce any new hazards.
EP-AREAG-WO-DOP-0209, R.9	June 23, 2010	Major Revision	Incorporate instructions for interfacing with the Waste Compliance and Tracking System (WCATS). Incorporate editorial corrections as necessary. This revision does not introduce any new hazards.
EP-AREAG-WO-DOP-0209, R.10	September 7, 2010	Major Revision	Revise step 5.[27] to disposition Myers drums with purchase order numbers 72043, 61068, or 79340. Reformat procedure to the current P315 standards. Made editorial corrections, as necessary. No new hazards are being introduced as a result of this revision.

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1. PURPOSE

This procedure provides the requirements and instructions for performing Transuranic (TRU) waste receipt, storage, and transfers (loading, handling, staging, securing, storing, and transporting) of TRU waste containers [e.g., drums or standard waste boxes (SWBs)] in Technical Area (TA)-54 Area G and other Waste Disposition Project (WDP) supported facilities in a safe manner in accordance with P930-1, LANL Waste Acceptance Criteria. Additionally, this procedure ensures compliance with the requirements defined in the ABD-WFM-002, Technical Safety Requirements (TSRs) for TA-54, Area G, are satisfied.

2. SCOPE

This procedure applies to TRU waste operations performed by Waste Disposition Project (WDP)-TRU Waste Project Support (TWPS) personnel at Technical Area (TA) 54, Area G. The procedure addresses waste receipt, storage, and transfers of TRU waste containers within and outside of Area G and TRU waste handled by "special projects," such as TRU certification programs (TSR 5.4.1). This procedure does not govern waste receipt and storage activities performed in other WDP-supported facilities [i.e., Radio assay and Non-destructive Testing (RANT), Waste Characterization, Reduction and Repackaging Facility (WCRRF)].

This procedure contains both Reference (Ref) and Use Every Time (UET) as identified in the Section headers. Additionally, portions of Section 8.2, Transport Vehicle Loading, and Section 9.2, Transport Vehicle Loading, **SHALL** be performed using the reader/worker method as defined in P315, Conduct of Operations Manual; Chapter 16, Tier 3 Operations Procedures.

3. PRECAUTIONS AND LIMITATIONS

3.1 General

- Activities, items, and containers **SHALL** satisfy approved design specifications, regulatory requirements, process-specific parameters, and procedural requirements. Activities, items, or containers that do not conform to the approved specifications and requirements are considered nonconforming and Nonconformance Reports (NCRs) **SHALL** be generated in accordance with P330-6, Nonconformance Reporting, as required.

- When a worker observes an unsafe condition or act that may pose an imminent danger or other safety concern/hazard, the worker has the authority and responsibility to inform the worker engaged in the work and request that the work activity be paused and/or stopped based on the risk posed to the individual, the employees, the environment, or the facility in accordance with P101-18, Procedure for Pause/Stop Work.

- Personnel associated with this procedure **SHALL** review and understand the requirements of the Radiological Work Permit(RWP).

- Personal protective equipment (PPE) **SHALL** be worn as required by the RWP and Industrial Hygiene personnel.

- To comply with the intent of the ALARA Program, all personnel **SHALL** apply the principles of time, distance, and shielding when working with radiological materials.

- Personnel **SHALL** use the appropriate drum handling equipment, such as cut resistance (e.g., leather or leather palm mechanic) gloves, when moving drums or when removing or applying locking rings.

- Identified portions of Sections 10 and 11, as identified in the sections, of this procedure **SHALL** be performed using the reader/worker method as described in P315 in order to ensure that the activity is performed as written and in the sequence written. Failure to comply with this requirement could result in exceeding a requirement established in the TA-54 Area G safety basis.

- Waste container movements **SHALL** be performed using the applicable TRU Transfer Form in order to reduce the possibility of obtaining the wrong waste container.

3.1 General (continued)

- Use proper lifting techniques and buddy system (when possible), when physically handling TRU waste containers.

- The following equipment **SHALL** be worn when handling TRU waste containers:
  — Safety shoes
  — cut resistance (e.g., leather or leather palm mechanic) gloves
  — Thermoluminescent dosimeter
  — Safety glasses with side shields

- Individuals are prohibited from walking or placing any portion of their body under a suspended or elevated load.

- Drum dollies should be chocked or blocked to prevent inadvertent movement during the loading and unloading of TRU drum containers.

- Two-way radio communications or cell phones **SHALL** be maintained between the TA-54 Operations Center during any evolutions performed in this procedure.

- Banding material **SHALL** not be used more than once. Do not use more than one fastening clip per length of banding material.

- Palletized waste containers being transferred from a transportainer to a dome staging area with a forklift may use a temporary strapping device in order to secure the container.

- For scanning equipment malfunctions the activity is to be stopped, and supervision and the TA-54 Operations Center are to be notified for the following:
  — An alternative method of verifying that Area G material-at-risk (MAR) inventory and transfer limits are not exceeded
  — An alternative method of documenting all waste transfers and new waste container locations

- Chemical or radiation exposure, including contamination from radioactive material, may result from a breached waste container. Breached drums are to be treated as a spill in accordance with EP-DIV-PLAN-01, TA-54 Building Emergency Plan, and the immediate area is to be evacuated to prevent chemical and radiation exposure (or contamination), and the TA-54 Operations Center notified.

- If possible, waste containers with high external radiation levels should be located away from exit aisles, center aisle, or other areas frequently accessed by personnel.

3.1 General (continued)

- Whenever possible, shield waste containers emitting high external radiation levels with waste containers that have a lower radiation dose rate.

- During the course of performing TRU operations, after closing out any internal inspection finding, notify the TA-54 Operations Center or the Lead Resource Conservation and Recovery Act (RCRA) Inspector.

- Class 2 laser scanning head can cause eye injury if eye is exposed to the beam. Do not allow eyes of user or observers to become exposed to the beam.

- Transportainer (cargo container) doors **SHALL** be secured in the open position when accessing a transportainer in order to prevent personnel injury due to a gust of wind causing the doors to swing closed while personnel are in the path of the door swing.

- Not Applicable (N/A) is documented on the attachments during the performance of this procedure indicating information that is not required to be recorded.

- Radiological surveys are not required for a waste container that is waiting to be transferred out of TA-54 Area G provided the following requirements are satisfied for the waste container:
  - Has a radiological survey tag that was completed less than or equal to one year from the current date
  - Has been in a controlled area to prevent cross-contamination with waste containers that have not had a radiological survey within the previous year.

- A waste container **SHALL** be considered unvented and **SHALL** be handled in accordance with EP-AREAG-WO-DOP-0201, TA-54 Area G Unvented TRU Waste Container Handling and Storage, if any of the following administrative limits (which take into consideration the uncertainties of the instrumentation) exist:
  - Sample performed using a Gas Chromatograph and resulting in a hydrogen concentration of greater than or equal to 20% Lower Flammable Limit (LFL) (8,000 ppm) or resulting in a VOC concentration of greater than or equal to 7,000 ppm.
  - Sample performed using a MultiRAE Plus Monitor and resulting in a hydrogen concentration of greater than or equal to 18% LFL or resulting in a VOC concentration of greater than or equal to 2,000 ppm.
  - No Waste Isolation Pilot Plant (WIPP)-approved filtered vent or WIPP-approved filtered vent obstructed.

- Waste containers with liquids (any amount or configuration) that have not been solidified (absorbed) **SHALL** be managed on secondary containment pallets.

3.2 Safety Basis Requirements

- The UN stamp on each drum can be used to determine the manufacturer of the drum, as follows:
  - Myers Drum: M020 or MXXX
  - Skolnik Drum: SDCC

- This procedure contains special procedure step markings. **($)** is used to identify steps that implement TA-54 Safety Basis requirements. Steps containing **($)** may not be changed without Engineering approval to ensure the safety envelope is maintained.

- **($)** Job-specific training (procedures, equipment operation, Area G hazards, etc.) for TRU WASTE operations. (AC 5.8.1)

- **($)** Training/certification for vehicle drivers and forklift and crane operators for handling/ securing/transporting TRU WASTE CONTAINERS. Forklift operator training includes limiting container lift heights to the minimum required to perform the lift safely. (AC 6.8)

- **($)** Two operators are required for activities performed in TRU WASTE storage buildings/facilities involving TRU WASTE CONTAINERS (with the exception of routine visual inspections); one worker trained to operate any equipment involved in the activity and the other worker present and able to recognize and respond to accidents and emergencies that involve TRU WASTE CONTAINERS. (AC 5.2.3.1)

- **($)** The quantity of radioactive waste at the Area G site and facilities **SHALL** be limited as follows: (LCO 3.1)
  - The total above-ground TRU WASTE content in all waste forms at Area G site, including the TRU WASTE storage domes, mobile facilities, and tritium waste storage sheds, **SHALL** be no more than 150, 000 plutonium equivalent curies (PE-Ci).
    * Only 10% of the Material at Risk within containers received through the offsite source recovery program may be counted towards the total above ground inventory, provided that all of the following conditions are met:
      - All OSRP actinide sealed sources are stored in Pipe Overpack Containers (POCs).
      - A minimum of 2 ft spacing between columns containing stacked drums/POCs is maintained.
      - Vehicle speeds are minimized around stacked drums/POCs.
      - All POCs are not stored or staged within a single dome.
  - The total above-ground tritium content in all waste forms at Area G site **SHALL** be no more than 4,000,000 Ci.
  - The total TRU WASTE content in Bldg. 54-49, Bldg. 54-283, or Bldg. 54-375 in all waste forms, including containers stored outside within approx. 50 ft of the waste storage dome, **SHALL** be no more than 50,000 PE-Ci per building.

— The total TRU WASTE content in Bldg. 54-33, Bldg. 54-48, Bldg. 54-153, Bldg. 54-224, Bldg. 54-226, Bldg. 54-229, Bldg. 54-230, Bldg. 54-231, or Bldg. 54-232 in all waste forms **SHALL** be no more than 25,000 PE-Ci per building.

— The total tritium content in all waste forms in Bldg. 54-1027, Bldg. 54-1028, Bldg. 54-1030, or Bldg. 54-1041 **SHALL** be no more than 1,000,000 Ci per building.
— The total TRU WASTE content at each non-destructive examination (NDE)/non-destructive assay (NDA) mobile facility for any waste form except cemented or vitrified waste, including containers staged outside within approx. 50 ft of the NDE/NDA mobile facilities, **SHALL** be no more than 1,100 PE-Ci.
— The total TRU WASTE content in each temperature equilibration trailer for any waste form except cemented or vitrified waste, including containers staged outside within approximately 50 ft of the individual temperature equilibration trailers, **SHALL** be no more than 1,100 PE-Ci. (TSR Appendix A Bases)
— The total MAR in Building TA-54-412 **SHALL** be no more than 56 PE-Ci.

NOTE *TRU Waste Containers may be lifted higher than four feet when palletized and secured in accordance with EP-DIV-DOP-02, EWMO Division Specific Forklift Operations.*

- **($)** In areas where drum handling operations occur, a drum drop height **SHALL** be limited to no more than 4 feet. (AC 5.6.8.10.1)

- **($)** Only a single drum **SHALL** be lifted by a forklift using a drum clamp device. (AC 5.6.8.10.2)

- **($)** Combustible loading program: (AC 5.6.4.10)
  — Combustible material kept to a minimum in any waste storage area.
  — Designated storage position for wood crates at least 6 feet from designated storage position of TRU WASTE drums and other metal TRU WASTE CONTAINERS.
  — TRU WASTE drums stored on metal pallets or other non-combustible surface.
  — Vegetation and brush cut back from the site perimeter around the waste storage domes.
  — Combustible LLW placed in disposal pits will be containerized in non-combustible (e.g., metal) containers or covered with a layer of earth after placement. (AC 5.6.4.10)

- **($)** An arc flash standoff distance for unbounded metal objects is established and maintained for each lightning protection system down conductor associated with TRU waste storage. (AC 5.6.4.10.f)

3.2 Safety Basis Requirements (continued)

- **($)** Transfers of nuclear materials from Area G to RANT are limited to the posted speed limit or 30 mph, whichever is less. (AC 5.6.11.5)

- **($)** Suspending unnecessary outdoor transportation of TRU WASTE during inclement weather (AC 5.6.11.6)

- **($)** Transfers of nuclear material from Area G to RANT are not initiated during inclement weather. (AC 5.6.11.7)

- **($)** Combustible loading is maintained ALARA in the transport vehicle. (AC 5.6.11.8)

- **($)** Transfers of nuclear materials from Area G to RANT will utilize an enclosed vehicle whenever possible. (AC 5.6.11.9)

- **($)** Real time communications during the transfer of nuclear materials from Area G to RANT is established between the transport vehicle, the person in charge of the road sweep, and the person in charge of the transfer. (AC 5.6.11.10)

NOTE *Clamshell dome doors are closed and secured in accordance with EP-AREAG-FO-DOP-0211, Clamshell Dome Door Operations.*

- **($)** Clamshell dome doors **SHALL** be closed and secured during high wind conditions. (AC 5.4.1.3)

3.3 Waste Generated

The wastes generated by the operations described in this procedure includes but is not limited to the following:

- Discarded personal protective equipment (PPE)
- Plastic
- Smears
- Tie-downs
- Label backings
- Banding material

Minimize the generation of secondary waste:

- Segregate waste as either Green-is-Clean (GIC) or low-level waste (LLW) and place in the appropriate collection areas.
- The GIC trash stations consist of separate green containers for recyclable paper and other low-density wastes.

3.3 Waste Generated (continued)

- LLW generated as a result of TRU waste operations **SHALL** be collected, bagged, and placed in a LLW container. Separate, labeled LLW containers are provided for 1) non-compactable waste, 2) banding materials, and 3) compactable wastes.

4. PREREQUISITE ACTIONS

NOTE *The listed prerequisite actions may be completed in any order.*

4.1 Planning and Coordination

Operations Supervisor

[1] **ENSURE** that this procedure is the latest revision, and **IDENTIFY** this document as Working Copy or Information Only on the Title Page.

[2] **ENSURE** that the performance of this procedure has been scheduled on the applicable facility Plan of the Day (e.g., TA-54 Area G, RANT, or WCRRF).

[3] **ENSURE** that an RWP is available in accordance with P121, Radiation Protection.

[4] **ENSURE** that a pre-job briefing is conducted for all personnel involved in the performance of this procedure in accordance with EP-DIV-AP-0112, WDP Pre-Job Briefings.

[5] **IF** the waste container transfer is to a location outside of TA-54 Area G, other than TA-54-38 (RANT),
THEN COORDINATE with the OS-PT organization for transportation support.

[6] **ENSURE** that, as a minimum, the following personnel, trained in the use of this procedure, are available for performance of this procedure, as required:
- One Radiological Control Technician (RCT)
- **($)** Two Waste Handling Operators (AC 5.2.3.1)
- One Procedure Reader (Sections 10 and 11)
- One Person-in Charge (PIC)

[7] **ENSURE** forklift inspections are performed and documented in accordance with EP-DIV-DOP-02, EWMO Division Specific Forklift Operations.

4.1 Planning and Coordination (continued)

[8] **IF** performing one of the following sections:

- Section 6, TA-54 Area G TRU Waste Container Storage and Handling in Structures
- Section 7, TRU Waste Transfers Within TA-54 Area G
- Section 8, TRU Waste Container Transfer Outside TA-54 Other Than RANT (TA-54-38)
- Section 9, TRU Waste Container Transfer Between RANT (TA-54-38) and TA-54 Area G

THEN OBTAIN the applicable TRU Transfer Form for the waste container movement.

NOTE 1 *A TA-54 Waste Drum Verification Form may accompany some transfers from TA-55 (List of Containers) see Appendix 2, Example TA-54 Waste Drum Verification Form.*

NOTE 2 *If the generator has requested an exemption to any waste acceptance criteria (e.g., non-standard container), a completed Waste Acceptance Criteria Exemption Form (WEF) is required (P931-1).*

[9] **IF** performing Section 5, TRU Waste Receipt,
THEN:

[A] **DETERMINE** whether the following Material-at-Risk (MAR) limits for TA-54 Area G are not exceeded:

($) The total aboveground TRU waste inventory in all waste forms is less than or equal to 147,000 plutonium-equivalent Curies. This includes verification of the allowance for OSRP materials of less than 30,000 PE-Ci. (PE-Ci) (SR 4.1.1)

($) The total above ground tritium waste inventory in all waste forms is less than or equal to 4,000,000 Curies. (SR 4.1.2)

($) The quantity of TRU WASTE loaded onto a vehicle is less than or equal to 1,100 PE-Ci for any combination of WASTE CONTAINERS or less than or equal to 1,800 PE-Ci for a load of WASTE CONTAINERS containing only cemented or vitrified waste. (SR 4.3.1)

4.1 Planning and Coordination (continued)

[B] **IF** the MAR limits for TA-54 Area G would be exceeded by the receipt of the waste containers,
THEN:

[a] **SELECT** the REJECT button on the barcode scanner display screen in order to reject the waste container transfer.

[b] **NOTIFY** the TA-54 Operations Center of the discrepancy, and **REQUEST** the applicable actions.

[c] **NOTIFY** the originator of the discrepancy.

[d] **EXIT** this procedure.

NOTE *The date and time that waste containers are placed in Transportainers 545 and 546 is recorded on Attachment 4, Transportainer TA-54-545/TA-54-546 Waste Container Inventory Sheet, and the temperature is monitored by a digital thermometer with the capability of displaying the minimum and maximum temperatures.*

[10] **IF** performing Section 7.3, Transfer From Transportainer 545 or 546 to NDE/NDA 497, in order to perform Real-Time Radiography (RTR) characterization of a waste container, **THEN VERIFY** that the waste containers have been stored in Transportainer 545 or 546 for greater than or equal to 24 hr, as indicated on Attachment 4, at a temperature greater than 70 °F, as indicated on the TA-54 Operations Round Sheet.
(CALC-07-54-000-010-0002-M-R-0)

4.2 Special Tools and Equipment, Parts, and Supplies

NOTE *The list of special tools and equipment, parts, and supplies is not an all inclusive list and additional items may be used as necessary.*

4.2.1 Special Tools and Equipment

Waste Handling Operator

[1] **ENSURE** that the following special tools and equipment are available, as required:
- A two-way radio or cellular phone
- Barcode Scanner
- Drum banding equipment

- Drum dolly

4.2.1 Special Tools and Equipment (continued)

- Drum hand truck
- Equipment (e.g., a forklift) to move or unload waste for inspection and storage
- Fall protection equipment [e.g., a safety harness (for shaft storage)]
- Rubber hammer, Dead-blow mallet, or equivalent
- Handrails (for shaft storage)
- Hardhats (if overhead hazards are present or anticipated)
- Inspection tool for bottom of waste containers (e.g., mirror)
- Cut resistance (e.g., leather or leather palm mechanic) gloves
- Radiation monitoring equipment
- Safety glasses with side shields
- Safety shoes
- Sockets
- Thermoluminescent dosimeter (TLD)
- 1/2 in. drive ratchet
- Wrenches

5. PERFORMANCE—TRU WASTE RECEIPT

This section is a stand-alone section and may be performed independently of, or in conjunction with other Performance sections of this procedure.

($) Transfers of nuclear material to or from TA-54 Area G and RANT are not to be initiated during inclement weather. (AC 5.6.11.7)

($) The TRU waste content in each drum **SHALL** be less than or equal to 300 PE-Ci. (SR 4.2.1)

($) The TRU waste content in each overpack, SWB, or other metal waste box **SHALL** be less than or equal to 1,100 PE-Ci. (SR 4.2.2)

($) The TRU waste container in each waste container holding only cemented or vitrified waste **SHALL** be less than or equal to 1,800 PE-Ci. (SR 4.2.3)

NOTE *Each container will be accompanied with individual records [e.g., Transuranic Waste Storage Record (TWSR) and Shipping Request form (Form 1768), compilation/assembly of these records is performed outside of TA-54 Area G at the TA-54 Operations Center.*

Waste Handling Operator

[1] **ENSURE** that all applicable prerequisites in Section 4, Prerequisite Actions, are completed.

NOTE *Steps 5.[2] through 5.[14] are completed while the waste container transport vehicle is at the TA-54, Area G incoming vehicle inspection area (front gate).*

[2] **OBTAIN** the following transfer paperwork from the vehicle driver:
- Transuranic Waste Storage Record (TWSR)
- Uniform Hazardous Waste Manifests (only if TRU hazardous waste)
- TA-54 Waste Drum Verification Form (if provided)
- Waste Acceptance Criteria Exception Forms (Form 1973), as applicable

[3] **REVIEW** the container numbers on the receipt documents in order to determine whether the container numbers are consistent on all documents.

[4] **IF** a discrepancy is identified with the container numbers,
THEN:

[A] **STOP** the receipt of the waste containers.

5. PERFORMANCE—TRU WASTE RECEIPT (continued)

[B] **NOTIFY** the Operations Supervisor and TA-54 Operations Center for the applicable actions.

[C] **NOTIFY** the originator and OS-PT of the discrepancy.

RCT

[5] **($) SURVEY** the transport vehicle during receipt at the Area G site. (AC 5.6.5.5)

Waste Handling Operator

[6] **IF** radiological contamination is detected,
THEN follow the instructions of the RCT.

NOTE *Container numbers are typically scanned from the TRU Waste Storage Record to enter the containers into the TRU Waste Database unless the TRU Waste Storage Record cannot be scanned in which case the container numbers are entered manually into the scanner and independently verified by another operator.*

[7] **PERFORM** a RECEIVE WASTE SHIPMENT function using a barcode scanner.

[8] **DETERMINE** the destination of TRU Waste containers.

[9] **DOCK** the barcode scanner to up-load containers information and update the TRU Waste Tracking System.

[10] **DEPRESS** the ACCEPT button on the barcode scanner display screen in order to accept the transfer into TA-54 Area G.

NOTE *The faxing and copying of the TA-54 Waste Drum Verification Form may be performed at a time operationally convenient, not to exceed the 24 hours from receiving the waste container at TA-54 Area G.*

[11] **IF** a TA-54 Waste Drum Verification Form (list of containers in transfer) is present,
THEN:

[A] **SIGN** the TA-54 Waste Drum Verification Form (list of containers in transfer), and **FAX** the signed TA-54 Waste Drum Verification Form to Safeguards Division (SAFE), Materials Control and Accountability Group (SAFE-4) fax number on the form. (See example in Appendix 2, Example TA-54 Waste Drum Verification Form).

5. PERFORMANCE—TRU WASTE RECEIPT (continued)

[B] **COPY** the completed TA-54 Waste Drum Verification Form, and **FORWARD** a copy to the TA-54 Operations Center.

[12] **ESCORT** the transport vehicle to the TA-54 Area G destination.

[13] **ENSURE** that the transport vehicle is parked, and that the following are performed:

[A] **SHUT-DOWN** the transport vehicle.

[B] **LEAVE** the transport vehicle in gear (manual), or in park (automatic) and **SET** the air brakes and **CHOCK** the transport vehicle wheels (e.g., tractor or trailer).

[14] **OPEN** and **SECURE** the transport vehicle cargo (e.g., transportainer) doors.

NOTE *Transportainers can be accessed either through the rear or side doors.*

WARNING

Handling of TRU Waste Containers using an industrial forklift presents several hazards; container breech, dropped containers, obstructed areas, inclines, uneven surfaces, pedestrians which could result in personnel injury or exposure to radiological hazards. Operators SHALL comply with the safe operating practices for the use of powered industrial trucks and safety basis requirements for the safe handling of TRU waste containers.

Forklift Operator

[15] **IF** drums are to be removed from the transport vehicle,
AND there is no pallet on the transport vehicle,
THEN:

[A] **PICK UP** an empty steel pallet using a forklift.

[B] **POSITION** the empty steel pallet inside the opening of the transport vehicle cargo area (e.g., transportainer) access doors, and **LOWER** the pallet to the floor of the transportainer.

5. PERFORMANCE—TRU WASTE RECEIPT (continued)

WARNING

1. **Overweight containers are defined as TRU waste containers weighing greater than 800 pounds. Overweight containers have been identified and labeled (> 800 pounds). When forklift operators engage pallets handling containers greater than 800 pounds, they must ensure that the overweight containers are placed closest to the forklift backrest to prevent exceeding the forklift lifting capacity which could result in a waste container breach forklift upset, and personnel injury. Palletized TRU containers SHALL be limited to four drums total, and only two of which can exceed 800 pounds.**

2. **Workers must exercise extreme caution when physically handling waste containers without the use of material handling equipment. The use of proper PPE and safe lifting techniques will prevent a serious back strain and/or personal injury.**

Waste Handling Operator

[C] **BATCH** the waste containers up to a maximum of four drums to a single pallet using a drum hand truck or other approved lifting methods, not to exceed the maximum lifting capacity of the forklift or no more than four drums total, and only two of which may exceed 800 pounds.

WARNING

Workers must ensure containers are strapped or banded together on the pallet before moving loads with a forklift in order to prevent a load shift or loss of load during transport, which could result in a waste container breach, forklift upset, and personnel injury.

[D] **SECURE** the waste containers in accordance with EP-DIV-DOP-02, EWMO Division Specific Forklift Operations.

5. PERFORMANCE—TRU WASTE RECEIPT (continued)

CAUTION

Clamshell dome doors SHALL be closed and secured during high wind conditions to prevent damage to equipment and TRU waste containers.

[16] **IF** the waste containers are to be stored in a dome,
AND the dome doors (clamshell) are closed,
THEN OPEN the dome doors in accordance with EP-AREAG-FO-DOP-0211, Clamshell Dome Door Operations at TA-54, Area G.

[17] **MOVE** the waste containers to the designated staging area using a forklift.

[18] **PLACE** palletized TRU waste containers on the dome floor.

[19] **REMOVE** the temporary tie-down strapping from the waste containers, as necessary.

WARNING

Workers must exercise extreme caution when physically handling waste containers without the use of material handling equipment. The use of proper PPE and safe lifting techniques will prevent a serious back strain and/or personal injury.

[20] **IF** the waste containers are drums,
THEN REMOVE the drums from the pallet, and **SEPARATE** each drum with adequate spacing (approximately three feet) to allow for drum inspection and radiological survey.

NOTE *The transportainer should remain at the staging area until the containers have been visually inspected and accepted in Section 7 of the TWSR.*

[21] **DETERMINE** whether the WIPP-approved filtered vent numbers of the waste containers matches the WIPP-approved filtered vent number on the applicable TWSR.

[22] **IF** a WIPP-approved filtered vent number does **NOT** match the filtered vent number on the applicable TWSR,
THEN CORRECT the WIPP-approved filtered vent number on the TWSR.

[23] **REPEAT** Steps 5.[17] through 5.[22] until all containers are staged.

5. PERFORMANCE—TRU WASTE RECEIPT (continued)

RCT

[24] **(S) SURVEY** TRU WASTE CONTAINERS during receipt at the Area G site. (AC 5.6.5.5).

Waste Handling Operator

[25] **IF** radiological contamination is detected,
THEN follow the instructions of the RCT.

[26] **VISUALLY INSPECT** each waste container for the following,

- Container breach (e.g., leak, hole in container)
- Bulging container (e.g., bulging container, round bottom egg shaped)
- **(S)** Equipped with drum lid WIPP-approved filtered vent (visible, vent hole not blocked or obstructed, corroded) (LCO 3.5)
- Drum lid bungs (gasket not damaged, cannot loosen with hand), as applicable
- Drum lid-locking ring (in place with jam nut against the unthreaded lug or bolt-head side, ring-opening in-line with seam)
- Proper labeling:
  - Radioactive labels
  - DOT Type 7 A container with UN numbers
  - Hazardous Label (if applicable)
  - Non-Hazardous (If applicable)
  - Non DP Waste (if needed/as applicable)
  - Myers drum Purchase Order Numbers 72043, 61068, or 79340

NOTE *Drums that have been identified in the following category may be transferred within the boundaries of LANL but may not be shipped off-site (outside of LANL boundaries) without being overpacked into a DOT 7A Type A compliant overpack.*

[27] **IF** the waste container is a Myers drum Purchase Order Number 72043, 61068, or 79340, **AND** the Myers drum does **NOT** have a LANS and CCP hold tag,
THEN:

[A] **NOTIFY** Supervision, QA, and a CCP representative of the drum discrepancy.

5. PERFORMANCE—TRU WASTE RECEIPT (continued)

NOTE 1 *A Quality Assurance (QA) representative may be contacted for assistance with the NCR process.*

NOTE 2 *The NCR may be initiated at an operationally convenient time.*

[B] **ENSURE** that an NCR is initiated in accordance with P330-6, Nonconformance Reporting, as required.

[28] **IF** a waste container exhibits evidence of container bulging or container breach,
THEN:

[A] **SUSPEND** affected operations.

[B] **OBTAIN** the container identification number, if safe to do so.

[C] **EXIT** the immediate area around the suspect container.

[D] **PREVENT** other personnel from entering the area, such as closing and controlling dome doors.

NOTE *EP-AREAG-RM-EOP-0210, Bulging Waste Container, and EP-AREAG-RM-AOP-0412, Questionable Integrity of Waste Container, address issues involving the integrity of a waste container.*

[E] **NOTIFY** the Operations Supervisor and the TA-54 Operations Center of the waste container location and condition.

[F] **EXIT** this procedure.

[29] **IF** a WIPP-approved filtered vent is **NOT** installed in the waste container lid,
OR the WIPP-approved filtered vent is obstructed,
THEN:

[A] **SUSPEND** affected operations until permission is obtained by TA-54 Operations Center and Operations Supervisor.

[B] **GO** to EP-AREAG-WO-DOP-0201, TA-54 AREA G Unvented TRU Waste Container Handling and Storage.

5. PERFORMANCE—TRU WASTE RECEIPT (continued)

[30] **IF** any of the following criteria is applicable:

- the drum lid closure ring bolt is not aligned with the drum seam,
- the drum lid closure ring jam nut is not tightened against the unthreaded closure ring lug,
- missing or inappropriate labeling

THEN NOTIFY the Operations Supervisor for the applicable actions.

NOTE *Individual waste containers may be rejected in the Waste Compliance and Tracking System (WCATS).*

[31] **IF** the Operations Supervisor determines to reject the containers
THEN:

[A] **STOP** the work activity.

[B] **REJECT** containers.

[C] **INITIATE** an NCR in accordance with P330-6, Nonconformance Reporting, as required.

NOTE 1 *Rejecting the waste container in the Waste Compliance and Tracking System (WCATS) may be performed at a time operationally convenient, not to exceed the 48 hours from receiving the waste container at TA-54 Area G.*

NOTE 2 *The WCATS provides an electronic notification (e.g., email) to those individuals with assigned Tasks within WCATS.*

[D] **IF** the waste containers being received are in the WCATS,
THEN ACCESS the WCATS Main Screen (http://wcats.lanl.gov:7777/wcats/) and reject each waste container received in accordance with WES-MAN-5004, Los Alamos National Laboratory WCATS Version 2 User's Manual.

[E] **CONTACT** shipper and OS-PT about deficiency.

[F] **ENSURE** that the container acceptance in Section 7 of the TWSR is not completed.

[G] **PLACE** affected waste containers on pallet, and **SECURE** in accordance with EP-DIV-DOP-02.

5. PERFORMANCE—TRU WASTE RECEIPT (continued)

NOTE *Rejected containers may be placed in a safe configuration and temporarily stored until arrangements are finalized to return the rejected container to the originator.*

[H] **LOAD** deficient containers onto transport using a forklift.

[I] **ENSURE** that the waste containers are secured in vehicle using approved fastening or securing equipment;
- TRU waste containers securing devices (strapping material)
- Trailer/truck rails
- A stake bed with railings

[J] **ENSURE** that the transport vehicle doors are closed and secure.

[K] **ENSURE** that the transport vehicle is transported to the TA-54 AREA Operations Center.

Operations Supervisor

[L] **REQUEST** that the TRU Database Administrator remove the rejected waste containers from the TA-54 Area G inventory.

[32] **IF** the Operations Supervisor determines to remediate the drums,
THEN:

[A] **IF** a drum ring jam nut is **NOT** positioned against the drum closure ring bolt head (unthreaded drum ring lug),
THEN:

[a] **LOOSEN** the jam nut.

[b] **REPOSITION** the jam nut against the bolt head side.

[c] **TIGHTEN** the jam nut against the drum lid bolt head using a wrench as illustrated on Appendix 1.

5. PERFORMANCE—TRU WASTE RECEIPT (continued)

[B] **IF** the ends of the drum lid closure ring lugs are touching,
OR the threaded drum lid closure ring lug is touching the jam nut,
THEN:

[a] **STOP** the work activity.

[b] **NOTIFY** the Operations Supervisor and the TA-54 Operations Center for the applicable actions.

[33] **DOCUMENT** the container acceptance and the satisfactory labeling in Section 7 of the TWSR by recording initials, date received, and signature.

[34] **IF** the hazardous waste transported is using a Uniform Hazardous Waste Manifest,
THEN DOCUMENT the Certification of Receipt on Line 20 of the Uniform Hazardous Waste Manifest.

NOTE 1 *Accepting the waste container at TA-54 Area G in the WCATS may be performed at a time operationally convenient, not to exceed the 48 hours from receiving the waste container at TA-54 Area G.*

NOTE 2 *The WCATS provides an electronic notification (e.g., email) to those individuals with assigned Tasks within WCATS.*

[35] **IF** the waste containers being received are in the WCATS,
THEN ACCESS the WCATS Main Screen (http://wcats.lanl.gov:7777/wcats/) and accept each waste container received in accordance with WES-MAN-5004, Los Alamos National Laboratory WCATS Version 2 User's Manual.

NOTE *Steps 5.[36] through 5.[42] may be performed out-of-sequence or in any order as permitted by the availability of personnel.*

[36] **AFFIX** an All-In-One-Label to each waste container (right or left of seam), as applicable.

5. PERFORMANCE—TRU WASTE RECEIPT (continued)

WARNING

Before crossing a radiation boundary area, review radiation level postings. Failure to comply with these requirements may cause undo radiation exposure to the worker.

NOTE *PE-Ci content may be displayed for each container using the barcode scanning equipment.*

[37] **REVIEW** paperwork for each drum to determine whether any drums are greater than 800 pounds.

[38] **IF** a drum is discovered weighing greater than 800 pounds,
THEN AFFIX a label (> 800 pounds) to the right or left of the All-In-One-Label.

WARNING

Waste Handling Operator must exercise extreme caution when physically handling TRU waste containers to avoid pinch points, foot injury, back injury and loss of control of container. Practice safe handling techniques and wear proper PPE (i.e., safety shoes, gloves safety glasses)

NOTE *Waste containers with liquids (any amount or configuration) that have not been solidified (absorbed) **SHALL** be managed on secondary containment pallets.*

[39] **PLACE** the drums on pallets ensuring that the following criteria are satisfied;
- Arrange drums to ensure labels, bolts, and barcodes are visible for viewing from aisle ways and walkways in the waste storage array
- Distinct "hot spots" are self-shielded to the extent possible by placement of the drum on a pallet to the inner side
- Batch drums with similar weights

[40] **IF** the waste containers are drums,
THEN BAND the load in accordance with EP-DIV DOP-02, EWMO Division Specific Forklift Operations, (1 band above the upper rolling hoops and 1 band just above the lower rolling hoops).

RCT

[41] **SURVEY** the transport vehicle cargo area, as necessary.

5. PERFORMANCE—TRU WASTE RECEIPT (continued)

Waste Handling Operator

[42] **IF** radiological contamination is detected,
THEN follow the instructions of the RCT.

[43] **CLOSE** and **SECURE** the transport vehicle cargo (e.g., transportainer) doors.

PIC

[44] **ENSURE** that the transport vehicle is moved out of TA-54 Area G., as required.

[45] **REFER** to Section 6, TA-54 Area G TRU Waste Container Storage and Handling In Structures, for the disposition of waste containers within domes.

6. PERFORMANCE—TA-54 AREA G TRU WASTE CONTAINER STORAGE AND HANDLING IN STRUCTURES

This section is a stand-alone section and may be performed independently of, or in conjunction with other Performance sections of this procedure.

WARNING

Before crossing a radiation boundary area, review radiation level postings. Failure to comply with this requirement may cause undo radiation exposure to the worker.

6.1 Waste Container Staging

($) Metal TRU waste containers **SHALL** be provided with a vent opening of sufficient size to prevent buildup of flammable gases inside the container. If a filter is installed in the vent opening, it **SHALL** be a WIPP-approved filter. (DF 6.3.3)

PIC

[1] **ENSURE** that all applicable prerequisites in Section 4, Prerequisite Actions, are completed.

[2] **IDENTIFY** the waste containers to be transferred using the applicable TRU Transfer Form.

Waste Handling Operator

[3] **IF** the location of the waste containers is **NOT** provided,
THEN:

[A] **NOTIFY** the Operations Supervisor of the discrepancy, and **REQUEST** the applicable actions.

NOTE *The following notification may be performed when operational conditions permit.*

Operations Supervisor

[B] **NOTIFY** the Production Control Manager of the discrepancy.

6.1 Staging of Containers (continued)

WARNING

1. **Forklift operators must exercise extreme caution and ensure other personnel are away from the immediate vicinity of forklift operations and use a spotter for all high lifts to prevent injury to personnel, equipment and material damage when handling elevated loads.**

2. **Extreme care SHALL be used when tilting the load forward or backward, particularly when high tiering or stacking. Tilting forward while engaging an elevated load SHALL be prohibited except to pick up a load. An elevated load SHALL not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load SHALL be used to prevent a loss of load.**

3. **Minimize the number of personnel in the immediate area (bystanders) when performing waste handling operations (especially when using a forklift, heavy equipment, or other transport vehicle) in order to prevent personnel injury.**

4. **A Spotter is to be used when operating in tight quarters or when there are personnel working in an adjacent area in order to prevent injury to bystanders.**

5. **Do not attempt to stop a falling load and remain a safe distance from loads when loading or unloading containers to prevent personnel injury.**

NOTE 1 *Selected containers may be located throughout the dome and in some cases may be one of four on a banded pallet.*

NOTE 2 *Drums may be temporarily placed in the dome isles to regroup waste drums on pallets in order to obtain the identified drums.*

Waste Handling Operator

[4] **RETRIEVE** the identified-palletized waste containers, and **PLACE** the waste containers to the designated staging area using a forklift with the assistance of a spotter and as directed by the PIC.

6.1 Staging of Containers (continued)

NOTE *Waste containers with liquids (any amount or configuration) that have not been solidified (absorbed) **SHALL** be managed on secondary containment pallets.*

[5] **IF** a drum is to be retrieved from a palletized load,
THEN:

[A] **REMOVE** the banding from the drums, and **REMOVE** the desired drums.

NOTE *The definition of restacking is the act of replacing and/or relocating waste containers in a storage array.*

[B] **REPLACE** the drums removed with different drums (if desired), and **BAND** the drums for restacking.

[6] **COMPARE** the staged waste container numbers to the waste container numbers listed on the applicable TRU Transfer Form.

[7] **IF** a waste container is **NOT** listed on the applicable TRU Transfer Form,
THEN:

[A] **SUSPEND** drum operations.

[B] **NOTIFY** the PIC of the discrepancy, and **REQUEST** the applicable actions.

NOTE *The waste containers that relocated to allow access to the identified waste containers may be scanned to their new location concurrent with performing the remained of this section as personnel availability permits.*

[8] **PERFORM** an UPDATE TRU PACKAGE LOCATION function using the barcode scanner for the staged waste containers and the repositioned waste containers.

NOTE *Multiple waste containers may be inspected simultaneously.*

[9] **IF** the waste containers are palletized drums,
THEN:

[A] **ENSURE** that the banding has been removed from the drums.

6.1 Staging of Containers (continued)

[B] **REMOVE** the waste containers from the pallet, and **SEPARATE** each container with adequate spacing (approximately three feet) to allow for container inspection and radiological survey, as necessary.

NOTE *Waste drums (55-gal and 85-gal) that were closed/sealed less than one year from the scheduled transfer date are inspected in accordance with P&T-SO-025, Pre-Transfer Closure Determination of TSD Packages.*

[10] **IF** the waste containers are drums (55-gal or 85-gal) to be transferred to a location outside of TA-54 Area G other than the RANT Site [e.g., Waste Characterization, Reduction, and Repackaging Facility (WCRRF)],
AND the package closure/seal date for the waste containers indicates that they were packaged one year or more ago from the scheduled transfer date,
AND documented evidence does **NOT** exist that the waste containers were closed in accordance with the manufacturer's instructions,
THEN:

NOTE 1 *Multiple copies of Attachment 3, TA-54 Area G Legacy Waste Container Inspection Data Sheet, may be required to record the data for each waste container to be transferred.*

NOTE 2 *Multiple waste containers may be inspected simultaneously.*

[A] **RECORD** the following information on Attachment 3:

- Waste Container Identification Numbers
- Transfer Number (TRU Transfer Form Lot Number) for the transfer to be performed on each copy of Attachment 3.

NOTE *Multiple waste containers may be inspected simultaneously.*

[B] **DETERMINE** whether greater than or equal to one year has elapsed since the Package Closure/Seal Data on the waste container all-in-one label, and **CHECK** (√) YES or NO for the verification on Attachment 3.

6.1 Staging of Containers (continued)

NOTE *A 100% inspection includes the top, sides, and bottom of the waste container and the inspection of the bottom of the waste container may be performed at this point or as the waste containers are loaded onto the transport vehicle.*

[C] **VISUALLY INSPECT** 100% (top, sides, and bottom) of the waste container exterior for the criteria listed on Attachment 3, (see Appendix 3, TA-54 Area G Waste Container Inspection Criteria, for details), and **CHECK** (√) YES or NO for each inspection result on Attachment 3.

[D] **GO** to Step 6.1[12].

NOTE *The following step is <u>not</u> a required 100% inspection of the waste containers.*

[11] **VISUALLY OBSERVE** the waste containers for any abnormality such as the following,

- Container breach (e.g., leak, hole in container)
- Bulging container (e.g., bulging container, round bottom egg shaped)
- **($)** Equipped with drum lid WIPP-approved filtered vent (visible, vent hole <u>not</u> blocked or obstructed, corroded) (LCO 3.5)
- Proper labeling
  - All-in One Label
  - Greater than 800 lb (as applicable)
  - Radioactive labels
  - Hazardous Label (if applicable)
  - Non-Hazardous (If applicable)
  - Weight hand written on top of drum lid

[12] **IF** a waste container exhibits evidence of bulging or container breach,
THEN:

[A] **SUSPEND** affected operations.

[B] **OBTAIN** the container identification number, if safe to do so.

[C] **EXIT** the immediate area around the suspect container.

[D] **PREVENT** other personnel from entering the area, such as closing and controlling dome doors.

6.1 Staging of Containers (continued)

NOTE *EP-AREAG-RM-EOP-0210, Bulging Waste Container, and EP-AREAG-RM-AOP-0412, Questionable Integrity of Waste Container, address issues involving the integrity of a waste container.*

[E] **NOTIFY** the Operations Supervisor and the TA-54 Operations Center of the waste container location and condition.

[F] **EXIT** this procedure.

[13] **IF** a drum WIPP-approved filtered vent is **NOT** installed in the waste container lid, **OR** the WIPP-approved filtered vent is obstructed,
THEN:

[A] **SUSPEND** affected operations until permission is obtained by TA-54 Operations Center and Operations Supervisor.

[B] **GO** to EP-AREAG-WO-DOP-0201, TA-54 AREA G Unvented TRU Waste Container Handling and Storage.

[14] **IF** a container fails the visual inspection for any reason other than a breach,
THEN:

[A] **IF** the failure is due to a labeling problem,
THEN request replacement labels from the Waste Environmental Services-Waste Acceptance (WES-WA).

[B] **NOTIFY** supervision and the TA-54 Operations Center for instructions on how to correct any other deficiencies.

[C] **ENSURE** that a nonconformance report (NCR) is initiated in accordance with P330-6, Nonconformance Reporting, as applicable.

[15] **IF** the waste container inspection criterion is questionable,
THEN:

[A] **STOP** the work activity.

[B] **NOTIFY** Operations Supervisor and the TA-54 Operations Center for guidance.

6.1 Staging of Containers (continued)

[16] **IF** the waste containers are **NOT** to be transferred the same day,
THEN PERFORM an UPDATE TRU PACKAGE LOCATION function using a barcode scanner.

[17] **WHEN** the waste containers are to be transferred,
THEN GO to Section 7, TRU Waste Transfers Within Area G, Section 8, TRU Waste Container Transfer Outside TA-54 Other Than RANT (TA-54-38), or Section 9, TRU Waste Container Transfer Between RANT (TA-54-38) and TA-54 Area G, as applicable.

6.2 Handling and Returning TRU Waste Containers in Structures

When returning TRU waste containers to dome storage arrays, the waste handling operator must ensure compliance with the following requirements for safe and proper handling and/or storage of waste containers:

NOTE *Container movements within TA-54 Area G that are not categorized by the TRU Transfer Program only require a location update using a barcode scanner, a TRU Transfer Form is not required.*

- **($)** Metal TRU waste containers **SHALL** be provided with a vent opening of sufficient size to prevent buildup of flammable gases inside the container. If a filter is installed in the vent opening, it **SHALL** be a WIPP-approved filter. (DF 6.3.3)

- **($) IF** stacking pallets with 55-gallon (208-liter) containers and/or SWBs, **ENSURE** containers area stacked/layered no more than three high. (AC 5.6.8.3)

- **($) IF** stacking pallets with 85-gallon (322-liter) containers, **STACK** no more than three high, except in the Transuranic Waste Inspectable Storage Project (TWISP) domes (Domes 54-229, 54-230, 54-231, and 54-232), where 85-gallon containers may be stacked only two high. (AC 5.6.8.3)

- **($) ENSURE** metal TRU Waste containers are not stored in the Lightning Protection System ARC Flash-stand-off distance (painted in yellow around inside edge of structures). (AC 5.6.4.10.f)

- **ARRANGE** containers to ensure labels, bolts, and barcodes are visible for viewing from aisle ways and walkways in the waste storage array

6.2 Handling and Returning TRU Waste Containers in Structures (continued)

- Distinct "hot spots" are self-shielded to the extent possible by placement on the pallet to the inner side of the pallet.
- **BATCH** containers with similar weights
- **($)** Designate storage position for wood crates at least 6 ft from designated storage position of TRU WASTE drums and other metal TRU WASTE CONTAINERS. (AC 5.6.4.10.b)
- **PERFORM** barcode scanning function UPDATE TRU WASTE STORAGE LOCATION function and cradle to update the TRU Waste Tracking System.
- Containers weighing greater than 800 lb **SHALL** not be stacked on the third layers.
- Palletized loads **SHALL** be banded together in accordance with EP-DIV-DOP-02, EWMO Division Specific Forklift Operations (one band above the upper rolling hoops and one band just above the lower rolling hoop).

PIC

[1] **ENSURE** that all applicable prerequisites in Section 4, Prerequisite Actions, have been completed.

[2] **DETERMINE** where the TRU Waste containers are to be stored in the dome.

WARNING

Extreme care SHALL be used when tilting the load forward or backward, particularly when high tiering or stacking. Tilting forward while engaging an elevated load SHALL be prohibited except to pick up a load. An elevated load SHALL not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load SHALL be used to prevent a loss of load.

NOTE *Waste containers with liquids (any amount or configuration) that have not been solidified (absorbed) **SHALL** be managed on secondary containment pallets.*

Waste Handling Operator

[3] **MOVE** the waste containers to the designated location in the dome (aisle and column) as directed by the PIC using a forklift.

6.2 Handling and Returning TRU Waste Containers in Structures (continued)

[4] **($) IF** the waste containers are palletized drums,
THEN ENSURE that the drums are banded together in accordance with EP-DIV-DOP-02 (one band above the upper rolling hoops and one band just above the lower rolling hoop). (AC 5.6.8.3.c)

[5] **PLACE** the waste containers in a stack or aisle as directed by the PIC.

[6] **PERFORM** an UPDATE TRU PACKAGE LOCATION function using a barcode scanner.

7. PERFORMANCE—TRU WASTE TRANSFERS WITHIN TA-54 AREA G

These sub-sections are stand-alone and may be performed independently of, or in conjunction with other Performance sections of this procedure.

7.1 TRU Waste Container Preparation

($) Metal TRU waste containers **SHALL** be provided with a vent opening of sufficient size to prevent buildup of flammable gases inside the container. If a filter is installed in the vent opening, it **SHALL** be a WIPP-approved filter. (DF 6.3.3)

NOTE *Container movements within TA-54 Area G that are not categorized by the TRU Transfer Program only require a location update using a barcode scanner; a TRU Transfer Form is not required.*

Waste Handling Operator

[1] **ENSURE** that all applicable prerequisites in Section 4, Prerequisite Actions, are completed.

[2] **IF** the waste container transfer is initiated by a TRU Transfer Form,
THEN ENSURE that a TRU Transfer Form listing the waste containers to be transferred has been obtained.

[3] **IF** the location of the waste containers is **NOT** provided,
THEN:

[A] **NOTIFY** the Operations Supervisor of the discrepancy, and **REQUEST** the applicable actions.

NOTE *The following notification may be performed at a time operationally convenient.*

Operations Supervisor

[B] **NOTIFY** the Production Control Manager of the discrepancy.

Waste Handling Operator

[4] **REMOVE** the waste containers from storage, and **PLACE** the palletized waste containers in the designated staging area as directed by the PIC.

7.1 TRU Waste Container Preparation (continued)

[5] **IF** all four containers are **NOT** designated for transfer,
THEN:

[A] **UN-BAND** the selected waste containers, and **REMOVE** the waste containers from the pallet.

[B] **REPLACE** the waste containers that are not to be moved in accordance with Section 6.2, Handling and Returning TRU Waste Containers in Domes.

[6] **IF** the waste container transfer is initiated by a TRU Transfer Form,
THEN:

[A] **COMPARE** the waste container numbers to the waste container numbers listed on the applicable TRU Transfer Form.

[B] **IF** a waste container is **NOT** listed on the applicable TRU Transfer Form,
THEN:

[a] **SUSPEND** drum operations.

[s] **NOTIFY** the PIC of the discrepancy, and **REQUEST** the applicable actions.

[7] **VISUALLY INSPECT** the accessible portions of each waste container for the following:

- Container breach (e.g., leak, hole in container)
- Bulging container (e.g., bulging container, round bottom egg shaped)
- **($)** Equipped with drum lid WIPP-approved filtered vent (visible, vent hole not blocked or obstructed, corroded) (LCO 3.5)

[8] **IF** a waste container exhibits evidence indicating container bulging or container breach,
THEN:

[A] **SUSPEND** affected operations.

[B] **OBTAIN** the container identification number, if safe to do so.

[C] **EXIT** the immediate area around the suspect container.

7.1 TRU Waste Container Preparation (continued)

[D] **PREVENT** other personnel from entering the area, such as closing and controlling dome doors.

NOTE *EP-AREAG-RM-EOP-0210, Bulging Waste Container, and EP-AREAG-RM-AOP-0412, Questionable Integrity of Waste Container, address issues involving the integrity of a waste container.*

[E] **NOTIFY** the Operations Supervisor and the TA-54 Operations Center of the waste container location and condition.

[F] **EXIT** this procedure.

[9] **IF** a WIPP-approved filtered vent is **NOT** installed in the waste container lid,
OR the WIPP-approved filtered vent is obstructed,
THEN:

[A] **SUSPEND** affected operations until permission is obtained by TA-54 Operations Center and Operations Supervisor.

[B] **GO** to EP-AREAG-WO-DOP-0201, TA-54 AREA G Unvented TRU Waste Container Handling and Storage.

NOTE 1 *The radiological survey for transfers are performed before authorizing the transfer and radiological surveys for all other transfers are typically conducted at this point in the procedure.*

NOTE 2 *A radiological survey is required for those waste containers being transferred to the designated staging area for waste containers to be transferred out of TA-54 Area G (Dome TA-54-0049 staging area).*

RCT

[10] **SURVEY** TRU WASTE CONTAINERS before transferring to another location within Area G site, as necessary.

Waste Handling Operator

[11] **IF** radiological contamination is detected,
THEN follow the instructions of the RCT.

7.1 TRU Waste Container Preparation (continued)

[12] **SELECT** the TRANSPORT function using a barcode scanner.

[13] **SELECT** the destination area (e.g., NDA, DVRS, or Dome) and type of vehicle for transport (e.g., flatbed or forklift) using a barcode scanner.

[14] **SCAN** the barcode labels on each waste container.

[15] **REVIEW** the barcode scanner display in order to verify that the waste containers do not exceed 1,100 PE-Ci limits for transport vehicle.

[16] **DOCK** bar-code scanner in cradle to verify that the "transfer location" inventory will not be exceeded.

[17] **IF** the containers exceed the MAR limit for the facility as displayed on bar-code scanner, **THEN:**

[A] **DEPRESS** the REJECT load button on the bar-code scanner.

[B] **NOTIFY** the Operations Supervisor of the discrepancy, and **REQUEST** the applicable actions.

[18] **DEPRESS** the ACCEPT button on the bar-code scanner.

NOTE *Waste containers with liquids (any amount or configuration) that have not been solidified (absorbed) **SHALL** be managed on secondary containment pallets.*

[19] **SECURE** the TRU Waste drums on a pallet using approved temporary fastening straps.

[20] **IF** using a forklift as the primary transport vehicle,
THEN GO to Step 7.1[22].

[21] **PICK-UP** TRU waste containers from staging area for placement in transport vehicle using a forklift.

[22] **SECURE** TRU waste containers to the vehicle using approved fastening or securing equipment;

- TRU waste containers securing devices (strapping material)
- Trailer/truck rails
- A stake bed with railings

7.1 TRU Waste Container Preparation (continued)

[23] **GO** to the appropriate Section 7.2 through 7.6 (NDE/NDA, NDE/NDA 497 & Transportainers 545,546, DVRS, other Area G domes) for the specific transfer.

7.2 TRU Waste Transfers to Transportainers 545 and 546 (NDE/NDA 497)

Section 7.1 **SHALL** be completed before performing this section.

- **($)** Metal TRU waste containers **SHALL** be provided with a vent opening of sufficient size to prevent buildup of flammable gases inside the container. If a filter is installed in the vent opening, it **SHALL** be a WIPP-approved filter. (DF 6.3.3)

- **($)** The total TRU WASTE content in a vehicle load of WASTE CONTAINERS in any combination **SHALL** be no more than 1,100 PE-Ci. (LCO 3.3).

- **($)** Building 497 NDA/NDE (Buildings 545, 546, 497, and staging areas), MAR Limit is less than or equal to 1,100 PE-Ci. (TSR 3.16)

- **($)** An intended transfer of TRU WASTE in all waste forms except cemented or vitrified waste to a NDE/NDA mobile facility **SHALL** result in the facility inventory being less than or equal to 1,100 PE-Ci. (SR 4.1.5)

NOTE 1 *Buildings TA-54-497, TA-54-545, and TA-54-546 and the associated staging areas are considered one MAR Inventory Boundary and is identified as Building 497 NDA/NDE on the barcode scanner with a MAR inventory limit of 1,100 PE-Ci.*

NOTE 2 *TRU waste containers may be transported to an alternate location such as to the south of NDA/NDE 497 before being staged in the Transportainers 545 and 546 staging area.*

Waste Handling Operator

[1] **TRANSPORT** the palletized TRU waste containers to the staging area on the north side of Transportainers 545 and 546.

[2] **REMOVE** banding material or temporary strapping from the TRU waste containers.

[3] **OPEN** the roll-up door of the transportainer (545 or 546 north-side) roll-up doors.

7.2 TRU Waste Transfers to Transportainers 545 and 546 (NDE/NDA 497) (continued)

NOTE *The waste containers may be placed on drum dollies or set on the transportainer floor for movement with a drum hand truck.*

WARNING

($) In areas where drum handling operations occur, a drum drop height SHALL be limited to no more than 4 feet (AC 5.6.8.10.1). Failure to comply with this requirement could lead to container failure and radiological release to personnel and the environment.

[4] **REPOSITION** each waste container, one at a time, in the opening of the transportainer using a forklift equipped with a drum grabber.

[5] **PLACE** each waste container on a drum dolly or on the transportainer floor for staging with drum hand truck.

WARNING

Containers must be placed in a single array against the outside walls of the transportainer to prevent blocking the emergency egress route.

NOTE *Waste containers with liquids (any amount or configuration) that have <u>not</u> been solidified (absorbed) **SHALL** be managed on secondary containment pallets.*

[6] **STAGE** each waste container starting at the far end of the transportainer (south), placing the waste containers in a single array against the inside walls of the transportainer.

[7] **ENSURE** that the waste containers are positioned so that the labels are visible from the aisle way.

[8] **RECORD** the following information on the copy of Attachment 4, Transportainer TA-54-545/TA-54-546 Waste Container Inventory Sheet, posted inside of the transportainer:

- Waste Container Number
- Transportainer Temperature (°F)
- Date and Time

7.2 TRU Waste Transfers to Transportainers 545 and 546 (NDE/NDA 497) (continued)

[9] **PERFORM** an UPDATE TRU WASTE PACKAGE function using a barcode scanner.

[10] **CLOSE** and **SECURE** the transportainer doors.

[11] **DOCK** the barcode scanner to update the TRU Waste Tracking System.

7.3 Transfer From Transportainer 545 or 546 to NDE/NDA 497

Section 7.1 **SHALL** be completed before performing this section.

- **($)** Metal TRU waste containers **SHALL** be provided with a vent opening of sufficient size to prevent buildup of flammable gases inside the container. If a filter is installed in the vent opening, it **SHALL** be a WIPP-approved filter. (DF 6.3.3)
- **($)** The total TRU WASTE content in a vehicle load of WASTE CONTAINERS in any combination **SHALL** be no more than 1,100 PE-Ci. (LCO 3.3).
- **($)** Building NDA/NDE (RTR-1 & 2, HENC 1&2, HGAS, FRAM, PTGS, staging areas), MAR Limit is less than or equal to 1,100 PE-Ci. (TSR 3.1.6)
- **($)** An intended transfer of TRU WASTE in all waste forms except cemented or vitrified waste to a NDE/NDA mobile facility **SHALL** result in the facility inventory being less than or equal to 1,100 PE-Ci. (SR 4.1.5)
- Prior to transferring waste containers from Transportainer 545 or 546 to an RTR unit for characterization the waste container **SHALL** be staged in Transportainer 545 or 546 for greater than 24 hr, as indicated on Attachment 4, at a temperature of greater than 70 °F, as indicated on the TA-54 Operations Round Sheet. (CALC-07-54-000-010-0002-M-R-0)

Waste Handling Operator

[1] **OPEN** the roll-up door on the applicable transportainer.

[2] **STAGE** the waste container at the north opening of the transportainer.

7.3 Transfer From Transportainer 545 or 546 to NDE/NDA 497 (continued)

[3] **PICK UP** each waste container to be moved, and **TRANSPORT** the waste container using a forklift with a drum grabber to the Building 497 NDA/NDE loading area until all of the waste containers to be moved have been moved.

[4] **RECORD** the date and time each waste container removed from Transportainer 545 or 546 on the copy of Attachment 4 posted inside of the transportainer:

NOTE *The Building 497 NDA/NDE, 545, and 546 are all considered one MAR area. Updating container movement from 545/546 to the NDA 497 does not require updating the TRU Waste Tracking System.*

[5] **CLOSE** and **SECURE** the transportainer roll-up doors.

7.4 Transfer to NDE/NDA (RTR-1 & 2, HENC 1 & 2, HGAS, FRAM, PTGS)

Section 7.1 **SHALL** be completed before performing this section.

- **($)** The total TRU WASTE content in a vehicle load of WASTE CONTAINERS in any combination **SHALL** be no more than 1,100 PE-Ci. (LCO 3.3).

- **($)** Building NDA/NDE (RTR-1 & 2, HENC 1&2, HGAS, FRAM, PTGS, staging areas), MAR Limit is less than or equal to 1,100 PE-Ci. (TSR 3.1.6)

- **($)** An intended transfer of TRU WASTE in all waste forms except cemented or vitrified waste to a NDE/NDA mobile facility **SHALL** result in the facility inventory being less than or equal to 1,100 PE-Ci. (SR 4.1.5)

- **($)** Metal TRU waste containers **SHALL** be provided with a vent opening of sufficient size to prevent buildup of flammable gases inside the container. If a filter is installed in the vent opening, it **SHALL** be a WIPP-approved filter. (DF 6.3.3)

Waste Operator Technician

[1] **TRANSPORT** the selected TRU waste containers to the designated NDA/NDE staging area.

7.4 Transfer to NDE/NDA (RTR-1 & 2, HENC 1 & 2, HGAS, FRAM, PTGS) (continued)

NOTE *Waste containers with liquids (any amount or configuration) that have not been solidified (absorbed) **SHALL** be managed on secondary containment pallets.*

[2] **UNLOAD** the palletized TRU waste containers into the NDA/NDE staging area.

[3] **REMOVE** the banding material or temporary strapping from the TRU waste containers.

WARNING

($) In areas where drum handling operations occur, a drum drop height SHALL be limited to no more than 4 feet (AC 5.6.8.10.1). Failure to comply with this requirement could lead to container failure and radiological release to personnel and the environment.

[4] **PERFORM** an UPDATE TRU WASTE PACKAGE function using a barcode scanner.

[5] **DOCK** the barcode scanner to update the TRU Waste Tracking System.

7.5 Transfer to DVRS Facility (TA-54-412)

Section 7.1 **SHALL** be completed before performing this section.

- **($)** The total MAR in Building TA-54-412 **SHALL** be no more than 56 PE-Ci. (LCO 3.1.9).
- **($)** An intended transfer of MAR to Building TA-54-412 will result in the facility inventory being less than or equal to 56 PE-Ci. (SR 4.1.8)
- **($)** Metal TRU waste containers **SHALL** be provided with a vent opening of sufficient size to prevent buildup of flammable gases inside the container. If a filter is installed in the vent opening, it **SHALL** be a WIPP-approved filter. (DF 6.3.3)

Waste Handling Operator

[1] **ENSURE** that the waste containers have been prepared in accordance with Section 7.1, TRU Waste Container Preparation.

7.5 Transfer to DVRS Facility (TA-54-412) (continued)

[2] **($) ENSURE** that the total MAR value of the waste containers to be transferred to TA-54-412 will not result in the TA-54-412 MAR value exceeding 56 PE-Ci. (SR 4.1.8)

[3] **TRANSPORT** the waste containers to the TA-54-412.

NOTE *Waste containers with liquids (any amount or configuration) that have not been solidified (absorbed) **SHALL** be managed on secondary containment pallets.*

[4] **REMOVE** the waste containers from the transport vehicle, and **PLACE** the palletized waste containers in the designated staging area as directed by the PIC.

[5] **PERFORM** an UPDATE TRU WASTE PACKAGE function using a barcode scanner.

[6] **GO** to Section 6, TA-54 Area G TRU Waste Container Storage and Handling in Structures, to store the waste containers.

7.6 Other Transfers Within Area G

- **($)** An intended transfer of TRU WASTE in all waste forms except cemented or vitrified waste to a temperature equilibration trailer **SHALL** result in the inventory being less than or equal to 1,100 PE-Ci. (SR 4.1.6)

- **($)** Metal TRU waste containers **SHALL** be provided with a vent opening of sufficient size to prevent buildup of flammable gases inside the container. If a filter is installed in the vent opening, it **SHALL** be a WIPP-approved filter. (DF 6.3.3)

Waste Handling Operator

[1] **ENSURE** that the waste containers have been prepared in accordance with Section 7.1, TRU Waste Container Preparation.

[2] **($) ENSURE** that the waste containers to be transferred do not exceed a MAR limit of 1,100 PE-Ci for the transport vehicle. (SR 4.1.5 and SR 4.1.6)

7.6 Other Transfers Within Area G (continued)

[3] **TRANSPORT** the waste containers to the designated area (e.g., dome or above ground storage area).

NOTE *Waste containers with liquids (any amount or configuration) that have not been solidified (absorbed) **SHALL** be managed on secondary containment pallets.*

[4] **REMOVE** waste containers from vehicle, and **PLACE** the waste containers in the designated staging area as directed by the PIC using a forklift.

[5] **PERFORM** an UPDATE TRU WASTE PACKAGE function using a barcode scanner.

[6] **DOCK** the barcode scanner in order to update the TRU Waste Tracking System.

8. TRU WASTE CONTAINER TRANSFER OUTSIDE TA-54 OTHER THAN RANT (TA-54-38)

WDP Waste Operations personnel only assist in retrieving and loading TRU waste containers for Transfers outside of TA-54 Area G to locations other than RANT (TA-54-38).

This section is a stand-alone section and may be performed independently of, or in conjunction with other Performance sections of this procedure.

NOTE *Packaging and Transportation personnel are responsible for securing and transporting all transfers leaving TA-54 Area G that are not destined to RANT (TA-54-38).*

8.1 Transfer Preparation

Waste Handling Operator

[1] **ENSURE** that all applicable prerequisites in Section 4, Prerequisite Actions, are completed.

[2] **ENSURE** that the waste containers have been staged in accordance with Section 7, TRU Waste Transfers within TA-54 Area G.

[3] **RECORD** the TRU Transfer Form lot number on Attachment 1.

[4] **COMPARE** the waste container numbers to the waste container numbers listed on the applicable TRU Transfer Form.

[5] **IF** a waste container is **NOT** listed on the applicable TRU Transfer Form, **THEN:**

[A] **SUSPEND** drum operations.

[B] **NOTIFY** the PIC of the discrepancy, and **REQUEST** the applicable actions.

[6] **INITIAL** and **DATE** on Attachment 1, TA-54 TRU Waste Transfer outside Area G Other Than RANT Checklist, to indicate that each waste container is listed on the TRU Transfer Form.

8.1 Transfer Preparation (continued)

NOTE *(\$) Metal TRU waste containers **SHALL** be provided with a vent opening of sufficient size to prevent buildup of flammable gases inside the container. If a filter is installed in the vent opening, it **SHALL** be a WIPP-approved filter. (DF 6.3.3)*

[7] **ENSURE** that each waste container has been inspected in accordance with Attachment 3, and **CHECK** (√) SAT or UNSAT on Attachment 1.

[8] **RECORD** the transfer date on Attachment 1.

[9] **ENSURE** that the appropriate transport vehicle is moved to the loading/staging area.

[10] **(\$) INSPECT** the transport vehicle to ensure that combustible materials are maintained as-low-as-reasonably possible on the transport vehicle. (AC 5.6.11.8)

[11] **IF** excess combustible materials are present,
THEN REMOVE the excess combustible materials from the transport vehicle before loading the waste containers.

[12] **DOCUMENT** the results of the combustible materials inspection on Attachment 1.

NOTE 1 *The radiological survey for transfers are performed before authorizing the transfer and radiological surveys for all other transfers are typically conducted at this point in the procedure.*

NOTE 2 *A radiological survey is <u>not</u> required for those waste containers that have been staged in the designated staging area for waste containers to be transferred out of TA-54 Area G and the waste container has had a radiological survey less than or equal to one year from the current date.*

RCT

[13] **ENSURE** that a radiological contamination survey of the waste containers is performed.

Waste Handling Operator

[14] **IF** radiological contamination is detected,
THEN follow the instructions of the RCT and RWP.

8.2 Transport Vehicle Loading

WARNING

Section 8.2 is performed using the reader/worker method described in P315 in order to ensure that the activity is performed as written and in the sequence written. Failure to comply with this requirement could result in exceeding a requirement established in the TA-54 Area G safety basis.

NOTE 1 *The inventory requirements for locations outside of TA-54 Area G are verified by the locations before authorizing the transfer.*

NOTE 2 *Documenting the performance of the steps in this section may be accomplished by the Reader rather than the Worker (performer) except for the TRU waste container independent verification and PIC verification steps.*

Waste Handling Operator

[1] **SELECT** the TRANSPORT function using barcode scanner, and **DOCUMENT** on Attachment 1.

[2] **SELECT** the transfer destination area on the barcode scanner display screen, and **DOCUMENT** on Attachment 1.

[3] **SELECT** the type of transfer vehicle on the barcode scanner display screen, and **DOCUMENT** on Attachment 1.

[4] **SCAN** the barcode labels for each waste container, and **DOCUMENT** on Attachment 1.

NOTE *The barcode scanner determines the total PE-Ci content of scanned TRU waste containers. The barcode scanner will <u>not</u> scan a waste container that would exceed the PE-Ci limit.*

[5] **($) VERIFY** that the quantity of TRU WASTE to be loaded onto the transport vehicle satisfies the following applicable requirement using the barcode scanner, and **DOCUMENT** on Attachment 1:

- Total TRU WASTE content of WASTE CONTAINERS in any combination is less than or equal to 1,100 PE-Ci (LCO 4.3)
- Total TRU WASTE content of cemented or vitrified TRU WASTE <u>only</u> is less than or equal to 1,800 PE-Ci using (LCO 4.3)

8.2 Transport Vehicle Loading (continued)

[6] **IF** the transport vehicle MAR limits would be exceeded,
THEN NOTIFY the PIC and the TA-54 Operations Center of the discrepancy, and **REQUEST** the applicable actions.

[7] **CRADLE** the barcode scanner, and **DOCUMENT** on Attachment 2, TRU Waste Transfer Area G To RANT Checklist.

[8] **IF** the destination MAR limit indicated FAILED (i.e., MAR limits would be exceeded), **THEN:**

[A] **PRESS** REJECT TRANSPORT on the barcode scanner to abort the operation.

[B] **NOTIFY** the PIC and the TA-54 Operations Center of the discrepancy, and **REQUEST** the applicable actions.

NOTE 1 *The inventory requirements for locations outside of TA-54 Area G are verified by the locations before authorizing the transfer.*

NOTE 2 *Banding or strapping is not required for SWBs.*

WARNING

($) In areas where drum handling operations occur, a drum drop height SHALL be limited to no more than 4 feet (TA-54 Area G AC 5.6.8.10.1) to prevent inadvertent spill or release of radioactive material to the employee and the environment. Drums SHALL be transported to the transportainers with a forklift using a pallet.

[9] **IF** moving drums,
THEN PERFORM the following, and **DOCUMENT** on Attachment 1:

[A] **PLACE** drums onto a pallet, not to exceed four drums per pallet, for transport to the transportainer.

[B] **STRAP** or **BAND** the palletized drums together in accordance with EP-DIV-DOP-02.

8.2 Transport Vehicle Loading (continued)

NOTE *Typically TRU waste containers are moved to and loaded on the transport vehicle in groups and Steps 8.2[10] through 8.2[13] may be repeated for each group of waste containers until all of the waste containers are loaded on the transport vehicle without reading these steps for each group of waste containers.*

[10] **MOVE** the waste containers from the staging area to the transport vehicle, and **DOCUMENT** on Attachment 1.

[11] **IF** the bottom of the waste container has **NOT** been inspected,
THEN INSPECT the bottom of the waste container exteriors for the criteria listed on Attachment 3 (see Appendix 3 for details), and **DOCUMENT** the results of the inspection on Attachment 3.

NOTE *The independent verification of the waste container numbers is to be performed at the transport vehicle.*

Independent Verifier (Second Waste Handling Operator)

[12] **VERIFY** that the waste container numbers on the waste containers to be loaded on the transport vehicle match the waste container numbers on the TRU Transfer Form, and **INITIAL** by the waste container number on the TRU Transfer Form.

NOTE *Steps 8.3[1] through 8.3[3] may be performed concurrently with the loading of the waste containers in Section 8.2, Transport Vehicle Loading.*

Waste Handling Operator

[13] **PLACE** the waste containers into the cargo area of the transport vehicle using a forklift in accordance with EP-DIV-DOP-02, and **DOCUMENT** on Attachment 1.

Independent Verifier (Second Waste Handling Operator)

[14] **WHEN** all of the waste containers have been loaded onto the transport vehicle,
THEN DOCUMENT the results of the independent verification on Attachment 1.

PIC

[15] **VERIFY** that the Steps 8.2[1] through 8.2[14] were appropriately performed, and **DOCUMENT** the successful loading of the correct waste containers on Attachment 1.

8.3 Transport Vehicle Closure/Transfer

WARNING

Waste Operator must exercise extreme caution when physically handling TRU waste containers and ensure the proper PPE is used to prevent pinch points, foot injury, back injury and loss of control on container.

NOTE *Steps 8.3[1] through 8.3[3] may be performed concurrently with the loading of the waste containers in Section 8.2, Transport Vehicle Loading.*

Waste Handling Operator

[1] **REMOVE** temporary strapping, as applicable.

[2] **ENSURE** that the waste containers are repositioned in a single array in the cargo area of the transport vehicle.

[3] **ENSURE** that the waste containers have been secured in the transport vehicle using tie-down straps or other securing devices.

[4] **CLOSE** and **SECURE** transport vehicle cargo doors.

Waste Handling Operator

[5] **ASSIST** Packaging and Transportation personnel as necessary to transfer the waste containers.

[6] **ENSURE** that the transport vehicle has been moved to TA-54 Operations Center.

RCT

[7] **CONDUCT** Radiological surveys of transportainer vehicle and transportainer.

Waste Handling Operator

[8] **IF** radiological contamination is detected,
THEN follow the instructions of the RCT and RWP.

[9] **GO** to Section 10, Post-Performance Activity.

9. TRU WASTE CONTAINER TRANSFER BETWEEN RANT (TA-54-38) AND TA-54 AREA G

This section is a stand-alone section and may be performed independently of, or in conjunction with other Performance sections of this procedure.

9.1 Transfer Preparation

NOTE 1 *(**$**) Transfers of nuclear material to or from Area G and RANT are not authorized during inclement weather. (AC 5.6.11.7)*

NOTE 2 *(**$**) Enclosed vehicle is to be used for the transfer of nuclear material from Area G to RANT whenever possible. (AC 5.6.11.9)*

NOTE 3 *When an enclosed vehicle is not available to transfer nuclear material between Area G and RANT the transfer may be performed using equipment such as a forklift, trailer with railings, or a stake bed truck.*

NOTE 4 *(**$**) Metal TRU waste containers **SHALL** be provided with a vent opening of sufficient size to prevent buildup of flammable gases inside the container. If a filter is installed in the vent opening, it **SHALL** be a WIPP-approved filter. (DF 6.3.3)*

Person-In-Charge (PIC)

[1] **ENSURE** that all applicable prerequisites in Section 4, Prerequisite Actions, are completed.

[2] **ENSURE** that the waste containers have been staged in accordance with Section 7, TRU Waste Transfers within TA-54 Area G.

[3] **ENSURE** that a radiological survey of the waste containers has been performed.

[4] **IF** radiological contamination is detected,
THEN ENSURE that the instructions of the RCT and RWP are followed.

[5] **RECORD** the TRU Transfer Form lot number on Attachment 2.

[6] **COMPARE** the waste container numbers to the waste container numbers listed on the applicable TRU Transfer Form.

9.1 Transfer Preparation (continued)

[7] **IF** a waste container is **NOT** listed on the applicable TRU Transfer Form,
THEN:

[A] **SUSPEND** drum operations.

[B] **NOTIFY** the PIC of the discrepancy, and **REQUEST** the applicable actions.

[8] **INITIAL** and **DATE** on Attachment 2, TA-54 Area G TRU Waste Transfer Outside Area G Surveillance Checklist, to indicate that each waste container is listed on the TRU Transfer Form.

NOTE *The following step may be performed out of sequence (e.g., during pre-job briefing).*

[9] **DOCUMENT** the following information on Attachment 2, TA-54 TRU Waste Transfer outside Area G Surveillance Checklist:

- Qualified government-owned vehicle information (e.g., Tractor, trailer license plate number)
- Qualified vehicle operator information
- Transfer date

[10] **ENSURE** that the appropriate transport vehicle has been moved to the loading/staging area.

[11] **($) INSPECT** the transport vehicle for excess combustible materials (wood, plastic, paper). (AC 5.6.11.8)

[12] **IF** excess combustible materials are present,
THEN REMOVE the excess combustible materials from the transport vehicle before loading the waste containers.

[13] **DOCUMENT** the results of the combustible materials inspection on Attachment 1.

9.2 Transport Vehicle Loading

WARNING

Section 9.2 is performed using the reader/worker method described in P315 in order to ensure that the activity is performed as written and in the sequence written. Failure to comply with this requirement could result in exceeding a requirement established in the TA-54 Area G safety basis.

NOTE 1 *The inventory requirements for locations outside of TA-54 Area G are verified by the locations before authorizing the transfer.*

NOTE 2 *Documenting the performance of the steps in this section may be accomplished by the Reader rather than the Worker (performer) except for the TRU waste container independent verification and PIC verification steps.*

Waste Handling Operator/PIC

[1] **IF** transferring waste containers from TA-54 Area G to RANT (TA-54-38), **THEN:**

[A] **SELECT** the TRANSPORT function using barcode scanner, and **DOCUMENT** on Attachment 2.

[B] **SELECT** the transfer destination area (TA-54 RANT) on the barcode scanner display screen, and **DOCUMENT** on Attachment 2.

[C] **SELECT** the type of transfer vehicle on the barcode scanner display screen, and **DOCUMENT** on Attachment 2.

9.2 Transport Vehicle Loading (continued)

[D] **SCAN** the barcode labels for each container, and **DOCUMENT** on Attachment 2.

NOTE *The barcode scanner determines the total PE-Ci content of scanned TRU waste containers. The barcode scanner will not scan a waste container barcode that would exceed the PE-Ci limit.*

[2] **($) ENSURE** the quantity of TRU WASTE loaded onto a vehicle is less than **OR** equal to 1,100 PE-Ci for any combination of WASTE CONTAINERS or less than or equal to 1,800 PE-Ci for a load of WASTE CONTAINERS containing only cemented or vitrified waste, and **DOCUMENT** on Attachment 2. (SR 4.3.1)

[3] **IF** the transport vehicle MAR limits would be exceeded,
THEN NOTIFY the PIC and the TA-54 Operations Center of the discrepancy, and **REQUEST** the applicable actions.

[4] **CRADLE** the barcode scanner, and **DOCUMENT** on Attachment 2.

[5] **IF** the RANT MAR limit indicated FAILED (i.e., MAR limits would be exceeded), **THEN:**.

[A] **PRESS** REJECT TRANSPORT on the barcode scanner to abort the operation.

[B] **NOTIFY** the PIC and the TA-54 Operations Center of the discrepancy, and **REQUEST** the applicable actions.

9.2 Transport Vehicle Loading (continued)

NOTE 1 *Typically TRU waste containers are moved to and loaded on the transport vehicle in groups and Steps 9.2[6] through 9.2[9] may be repeated for each group of waste containers until all of the waste containers are loaded on the transport vehicle without reading these steps for each group of waste containers.*

NOTE 2 *Steps 9.2[6], 9.2[7], and 9.2[9] are documented after all TRU waste containers have been placed on the transport vehicle.*

[6] **ENSURE** that waste drums are banded or strapped together before transporting the drums to the transport vehicle with a forklift, and **DOCUMENT** on Attachment 2.

[7] **MOVE** the TRU waste containers from the staging area to the transport vehicle, and **DOCUMENT** on Attachment 2.

NOTE 1 *Banding or strapping is not required for SWBs.*

NOTE 2 *The movement of waste containers may be necessary in order to access the waste containers.*

NOTE 3 *The independent verification of the waste container numbers is to be performed at the transport vehicle.*

Independent Verifier (Second Waste Handling Operator)

[8] **VERIFY** that the waste container numbers on the waste containers to be loaded on the transport vehicle match the waste container numbers on the TRU Transfer Form, and **INITIAL** by the waste container number on the TRU Transfer Form.

NOTE *Steps 9.3[1] and 9.3[2] may be performed concurrently with the loading of the waste containers in Section 9.2, Transport Vehicle Loading.*

Waste Handling Operator

[9] **PLACE** the TRU waste containers in the transport vehicle, and **DOCUMENT** on Attachment 2.

Independent Verifier (Second Waste Handling Operator)

[10] **WHEN** all of the waste containers have been loaded onto the transport vehicle, **THEN DOCUMENT** the results of the independent verification on Attachment 2.

9.2 Transport Vehicle Loading (continued)

PIC

[11] **VERIFY** that the Steps 9.2[1] through 9.2[10] were appropriately performed, and **DOCUMENT** on Attachment 2.

9.3 Transport Vehicle Closure/Transfer

WARNING

The waste handling operator must exercise extreme caution when physically handling TRU waste containers and ensure the proper PPE is used to prevent pinch points, foot injury, back injury and loss of control on container.

NOTE *Steps 9.3[1] and 9.3[2] may be performed concurrently with the loading of the waste containers in Section 9.2, Transport Vehicle Loading.*

Waste Handling Operator

[1] **REMOVE** temporary strapping or securing device and **REPOSITION** TRU waste containers in a single array in transport.

NOTE *Securing of waste containers in transport may be performed either by the Waste Handling Operator or Transport driver.*

[2] **SECURE** the waste containers in the transport vehicle using approved securing device.

[3] **CLOSE** and **SECURE** transport vehicle doors.

[4] **ENSURE** that the transport vehicle is moved/escorted to the TA-54 Operations Center.

[5] **ENSURE** that the radiological surveys of the transport vehicle have been documented.

9.3 Transport Vehicle Closure/Transfer (continued)

[6] **ENSURE** that two escorts with government vehicles (front and back) and access control personnel are available.

[7] **REQUEST** the TA-54 Operations Center make announcement, that the road between Area G and TA-54 West will be closed approximately fifteen minutes to perform a TRU waste transfer from Area G to RANT.

[8] **ENSURE** that individuals involved with the TRU waste container transfer have been instructed concerning their responsibilities.

[9] **($) ESTABLISH** real time communications between all personnel involved in the material transfer, and **INITIAL** on Attachment 2. (AC 5.6.11.10)

[10] **REQUEST** that the TA-54 Operations Center make a PA announcement that the road is closed between Area G and RANT.

[11] **($) ENSURE** that a vehicle sweep has been performed between TA-54 Operations Center and the TA-54 West Gate in order to verify the road closure and to notify any personnel outside of the public announcement system range. (SAC 5.6.11.1)

NOTE *A movable barrier, sign, or government vehicle may be used in lieu of the TA-54 West gate when the gate is inoperable.*

[12] **($) ENSURE** that the gate located at the guard station at TA-54 West is CLOSED, and **INITIAL** on Attachment 1. (SAC 5.6.11.1)

[13] **DOCUMENT** the completion of the vehicle sweep from the TA-54 Operations Center to the TA-54 West Gate on Attachment 2.

9.3 Transport Vehicle Closure/Transfer (continued)

NOTE *Steps 9.[14] and 9.[15] may be performed out of sequence (e.g., during the pre-job briefing).*

[14] **($) ENSURE** that the convoy driver (vehicle operator) has been instructed to maintain a speed during that transfer that is not greater than the posted speed limit or 30 mph, whichever is less, and **INITIAL** on Attachment 2. (AC 5.6.11.5)

[15] **ENSURE** that the escorts has been instructed to maintain a distance approximately 50 ft in front or back of the transport vehicle, and to communicate the road conditions to the Transport Vehicle Driver.

[16] **INSTRUCT** the convoy to proceed.

Lead Escort

[17] **IF** vehicle traffic or pedestrians are observed during the transfer,
THEN:

[A] **PROVIDE** direction to vehicles using the escort vehicle horn and lights, or hand signals to pull to the side of the road in order to allow convoy to pass.

[B] **PROVIDE** direction to pedestrians using the escort vehicle horn and lights, hand signals, or voice communications to stand back from the main roadway in order to allow convoy to pass.

Person-In-Charge (PIC)

[18] **NOTIFY** the TA-54 Operations Center upon the completion of the transfer and to make an announcement that the road is re-opened to normal traffic.

[19] **IF** the TA-54 West Gate was CLOSED,
THEN OPEN the TA-54 West Gate.

[20] **IF** a waste container was transferred from RANT (TA-54-38) to TA-54 Area G,
THEN RECEIVE the waste container at TA-54 Area G in accordance with Section 5, TRU Waste Receipt.

[21] **GO** to Section 10, Post-Performance Activity.

10. POST-PERFORMANCE ACTIVITY

10.1 Disposition

Waste Handling Operator

[1] **PRINT, SIGN, Z number, and DATE** on the applicable attachment (Attachment 1, 2, and 3).

NOTE *The PIC and Waste Handling Operator may be the same individual.*

PIC

[2] **REVIEW** the applicable attachments for accuracy and completeness.

[3] **IF** any discrepancies are identified with the attachments,
THEN working with the original surveillant correct the documentation.

[4] **IF** any deficiencies were identified,
THEN INITIATE actions to correct the deficiency [e.g., Facility Service Request (FSR) System], and **DOCUMENT** the actions taken (e.g., FSR Issue Number) in the Comments section of the applicable appendices.

[5] **PRINT, SIGN, Z number, and DATE** on the applicable attachment. (Attachment 1, 2, and 3).

[6] **IF** waste containers were transferred outside of Area G,
THEN FORWARD the applicable attachments to TA-54 Area G Operations Manager (OM).

OM or designee

[A] **REVIEW** Attachment 1 for accuracy and completeness.

[B] **PRINT, SIGN, Z number, and DATE** on Attachment 1.

10.1 Disposition (continued)

NOTE *Completing a Post-Job Review may be accomplished using the applicable P300 form or online (the preferred method since the institution has access to feedback and lessons learned http://int.lanl.gov/safety/iwmc/ [Click on the Submit IWD Part 4 Post-Job Review].*

PIC

[7] **IF** any of the following occur:

- A new activity was completed for the first time
- A request was made by anyone involved with the performance of this procedure to perform a post-job review
- An abnormal event occurred
- A revision to an existing procedure was issued and it has been determined by the procedure owner or designee that a Post-Job Review is required

THEN PERFORM a Post-Job Review in accordance with P300.

[8] **IF** the Post-Job Review identified any necessary changes to this procedure, **THEN INITIATE** a revision to this procedure.

10.2 Records Processing

Waste Handling Operator

[1] Ensure that documents generated by the performance of this procedure are processed as follows:

Record Identification	Record Type Determination	Protection/Storage Methods	Processing Instructions
Attachment 1, TA-54 TRU Waste Transfer Outside Area G Other Than RANT Checklist Attachment 2, TRU Waste Transfer Area G To RANT Checklist Attachment 3, TA-54 Legacy Waste Container Inspection Data Sheet Attachment 4, Transportainer TA-54-545/TA-54-546 Waste Container Inventory Sheet TRU Transfer Form	Quality Assurance (QA) Record	Records **SHALL** have a reasonable level of protection to prevent loss and degradation. Records **SHALL** be maintained in a metal file cabinet when not in use.	When the records are ready for final disposition, the record is transferred to Records Management in accordance with EP-DIR-SOP-4004, Record Transmittal and Retrieval Process.

11. REFERENCES

ABD-WFM-002, Technical Safety Requirements (TSRs) for Technical Area 54, Area G

CALC-07-54-000-010-0002-M-R-0, Heat Transfer Calculation for Drums in Cargo Containers

EP-AREAG-FO-DOP-0211, Clamshell Dome Door Operations

EP-AREAG-RM-EOP-0210, Bulging Waste Container

EP-AREAG-RM-AOP-0412, Questionable Integrity of Waste Container

EP-AREAG-WO-DOP-0201, TA-54 AREA G Unvented TRU Waste Container Handling and Storage

EP-AREAG-WO-DOP-0215, TRU Waste Container Barcode Scanning

EP-DIR-SOP-4004, Record Transmittal and Retrieval Process

EP-DIV-AP-0112, WDP Pre-Job Briefings

EP-DIV-DOP-02, EWMO Division Specific Forklift Operations

EP-DIV-PLAN-01, TA-54 Building Emergency Plan

P121-1, Radiation Protection

P300, Integrated Work Management

P315, Conduct of Operations Manual

P330-6, Nonconformance Reporting

P409, Waste Management

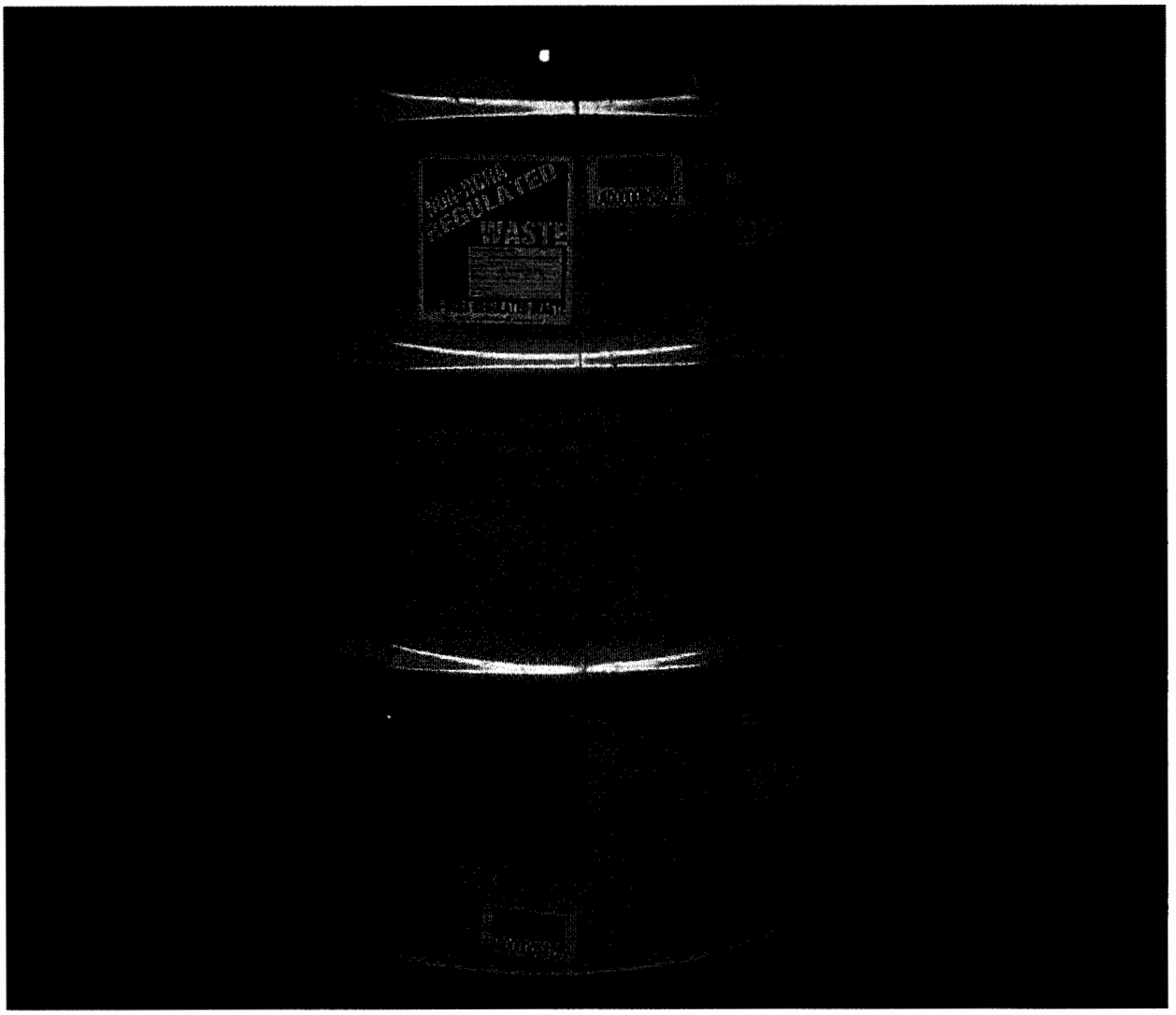
P930-1, LANL Waste Acceptance Criteria

WES-MAN-5004, Los Alamos National Laboratory WCATS Version 2 User's Manual

49 CFR §172.200, Applicability

APPENDIX 1
Page 1 of 1

TRU WASTE CONTAINER LABELING AND DRUM RING CLOSURE POSITION



APPENDIX 2
Page 1 of 1

EXAMPLE TA-54 WASTE DRUM VERIFICATION FORM

From _____ Group _____ Date _____

Phone # _____ Pager # _____ Fax # _____

Upon completion, Fax signed form to (505) 665-5566 SAFE-4, NM Accounting.

Note: This document reflects all the waste drums/containers leaving from MBA # _____ or Facility _____ and being transferred to the Los Alamos Burial Ground (TA-54) by OS-TP or Transport Date _____ Tru Waste ☐ Low Level waste ☐ Mixed Low Level Waste ☐

Drum/Container Number		OS-PT or Transporter Verification	TA-54 Verification	Comments
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			

Signing below does not imply that personnel have verified contents of the drum.

Signatures

_____
OS-TP or Transporter Signature

_____
TA-54 Receiver Signature

Question(s)? – Call Group SAFE-4, NM Accounting at 667-7436

Page_____ of _____

APPENDIX 3
Page 1 of 2

TA-54 AREA G WASTE CONTAINER INSPECTION CRITERIA FOR TRANSFER OUTSIDE TA-54 AREA G OTHER THAN RANT

Item	Container Criteria	Criteria Discussion
1	Is the waste container obviously degraded?	Obviously degraded means clearly visible and potentially significant defects in the waste container or waste container surface.
2	Is there evidence that the waste container is, or has been, pressurized?	Pressurization can be indicated by a fairly uniform expansion of the sidewalls, bottom or top. Past pressurization can be indicated by a notable outward deflection of the bottom or top. Verify that the waste container is not warped.
3	Is there any potentially significant rust or corrosion such that wall thinning, pin holes, or breaches are likely or the load bearing capacity is suspect?	Rust **SHALL** be assessed in terms of its type, extent, and location. Pitting, pocking, flaking, or dark coloration characterizes potentially significant rust or corrosion. This includes the extent of the waste container surface area covered, thickness, and, if it occurs in large flakes or built-up (caked) areas. Rusted waste containers may not be accepted if: • Rust is present in caked layers or deposits. • Rust is present in the form of deep metal flaking, or built-up areas of corrosion products. In addition, the location of rust should be noted; for example on a drum; top lid; filter region; locking chine; top one-third, above the second rolling hoop; middle one-third, between the first and second rolling hoops; bottom one third, below the second rolling hoop; and on the bottom. Waste container may still be considered acceptable if the signs of rust show up as: • Some discoloration on the payload container. • If rubbed would produce fine grit or dust or minor flaking (such that wall thinning does not occur).
4	Are there any split seams, tears, obvious holes, punctures (of any size), creases, broken welds, or cracks?	Waste containers with obvious leaks, holes or openings, cracks, deep crevices, creases, tears, broken welds, sharp edges or pits, are either breached or on the verge of being breached. Verify that there is no warpage that could cause the container to be unstable or prevent it from fitting properly in the applicable package.
5	Is the waste container improperly closed?	Inspect the fastener and fastener ring (chine) if applicable for damage or excessive corrosion. Inspect the alignment of the fastener to ensure that it is in firm contact around the entire lid and the waste container will not open during transportation.
6	Are there any dents, scrapes, or scratches that make the work container's structural integrity questionable or prevent the top and bottom surfaces from being parallel?	Deep gouges, scratches, or abrasions over wide areas are not acceptable. If top and bottom surfaces are not parallel, this would indicate that the container is warped. Dents should be less than ¼ inch deep by 3 inches long and between ½ inch to 6 inches wide. All other dents must be examined to determine impacet of structural integrity.

APPENDIX 3
Page 2 of 2

TA-54 AREA G WASTE CONTAINER INSPECTION CRITERIA FOR TRANSFER OUTSIDE TA-54 AREA G

7	Is there discoloration which would indicate leakage or other evidence of leakage of material from the waste container?	Examine the waste container regions near vents, top lid fittings, bottom fittings, welds, seams and intersections of one or more metal sheets or plates. Waste container must be rejected if evidence of leakage is present.
8	Is the payload container bulged?	For the purposes of this examination, bulging is indicated by: • A fairly uniform expansion of the sidewalls, bottom, or top (e.g., in the case of a drum, either the top or bottom surface protrudes beyond the planar surface of the top or bottom ring. • A protrusion of the side wall (e.g., in the case of a drum, beyond a line connecting the peaks of the surrounding rolling hoops or a line between a surrounding rolling hoop and the bottom or top ring), or Expansion of the sidewall (e.g., in the case of a drum, such that it deforms any portion of a rolling hoop).

ATTACHMENT 1
Page 1 of 1

TA-54 TRU WASTE TRANSFER OUTSIDE AREA G OTHER THAN RANT CHECKLIST

NOTE *An electronic version of this form is contained in the folder adjacent to this procedure.*

8.1[3] TRU Transfer Form lot number: _____

8.1[6] Staged waste containers are listed on the TRU Transfer Form: _____ / _____
Initials Date

8.1[7] Each waste container satisfies the inspection criteria on Attachment 3.
☐ SAT ☐ UNSAT ☐ N/A

8.1[8] Transfer Date: _____

8.1[12] **($)** There are no excess combustible materials present on the transport vehicle. (AC 5.6.11.8)
_____
Initials

8.2[1]	TRANSPORT selected on barcode scanner.	☐ SAT	☐ UNSAT
8.2[2]	Transfer destination area selected on barcode scanner.	☐ SAT	☐ UNSAT
8.2[3]	Transfer vehicle type selected on barcode scanner.	☐ SAT	☐ UNSAT
8.2[4]	TRU waste container barcode labels scanned.	☐ SAT	☐ UNSAT
8.2[5]	Barcode scanner indicates transport vehicle MAR limits satisfied.	☐ SAT	☐ UNSAT
8.2[7]	Barcode scanner cradled.	☐ SAT	☐ UNSAT
8.2[9]	TRU waste drums banned/strapped and palletized. ☐ N/A	☐ SAT	☐ UNSAT
8.2[10]	TRU waste containers moved to transport vehicle.	☐ SAT	☐ UNSAT
8.2[13]	TRU waste containers loaded onto transport vehicle.	☐ SAT	☐ UNSAT

8.2[14] Independent Verification of waste containers on the TRU Transfer Form.

Verified By: _____ / _____ / _____ / _____
IV (print) Signature Initials Z # Date

8.2[15] Correct waste containers loaded onto the transport vehicle
_____
PIC Initials

Comments: _____

10.1[1] Performed By: _____ / _____ / _____ / _____
Waste Handling Operator (print) Signature Initials Z # Date

10.1[5] Reviewed By: _____ / _____ / _____ / _____
PIC or designee (print) Signature Initials Z # Date

10.1[6][B] Reviewed By: _____ / _____ / _____
OM or designee (print) Signature Z # Date

ATTACHMENT 2
Page 1 of 2

TA-54 TRU WASTE TRANSFER AREA G TO RANT CHECKLIST

NOTE *An electronic version of this form is contained in the folder adjacent to this procedure.*

9.1[5] TRU Transfer Form lot number: _____

9.1[8] Staged waste containers are listed on the TRU Transfer Form: _____ / _____
Initials Date

9.1[9] Transfer Date: _____

Tractor license plate number: _____ ☐ N/A

Trailer license plate number: _____ ☐ N/A

Tractor operator: _____ / _____ ☐ N/A
Name (print) Z#

9.1[13] **(S)** There are no excess combustible materials present on the transport vehicle. (AC 5.6.11.8) _____
Initials

9.2[1][A]	TRANSPORT selected on barcode scanner.	☐N/A	☐SAT	☐UNSAT
9.2[1][B]	Transfer destination area selected on barcode scanner.	☐N/A	☐SAT	☐UNSAT
9.2[1][C]	Transfer vehicle type selected on barcode scanner.	☐N/A	☐SAT	☐UNSAT
9.2[1][D]	TRU waste container barcode labels scanned.	☐N/A	☐SAT	☐UNSAT
9.2[2]	Barcode scanner indicates transport vehicle MAR limits satisfied.		☐SAT	☐UNSAT
9.2[4]	Barcode scanner cradled.		☐SAT	☐UNSAT
9.2[6]	All waste drums banded or strapped together.	☐N/A	☐SAT	☐UNSAT
9.2[7]	All TRU waste containers moved to transport vehicle.		☐SAT	☐UNSAT
9.2[9]	All TRU waste containers loaded onto transport vehicle.		☐SAT	☐UNSAT

ATTACHMENT 2
Page 2 of 2

9.2[10] Independent Verification of all waste containers on the TRU Transfer Form:

Verified By: _____ / _____ / _____ / _____ / _____
IV (print) Signature Initials Z # Date

9.2[11] Section 9.2 has been successfully performed.

_____
PIC Initials

9.3[9] **($)** Real time communications has been established between the operators and PIC. AC 5.6.11.10)

_____
Initials

9.3[12] **($)** TA-54 West gate is CLOSED/SECURED. (SAC 5.6.11.1)

_____
Initials

9.3[13] **($)** Transfer route has been swept and is clear of vehicular traffic. (SAC 5.6.11.1)

_____
Initials

9.3[14] **($)** Vehicle operator instructed <u>not</u> to exceed posted speed limit or 30 mph, whichever is less. (AC 5.6.11.5)

_____
Initials

Comments: _____

_____

_____

_____

_____

10.1[5] Reviewed By: _____ / _____ / _____ / _____ / _____
PIC or designee (print) Signature Initials Z # Date

10.1[6][B] Reviewed By: _____ / _____ / _____ / _____
OM or designee (print) Signature Z # Date

ATTACHMENT 3
Page 1 of 1

TA-54 AREA G LEGACY DRUM INSPECTION DATA SHEET

8.1[10][A] Transfer No.: _____

Waste Container Identification No. 6.1[10][A]	Waste Container CLOSURE/SEAL DATE is ≥ 1 yr from today's date. 6.1[10][B]	Criterion 1 Is the payload container obviously degraded? 6.1[10][C]/ 8.2[11]	Criterion 2 Is there evidence that the payload container is, or has been, pressurized? 6.1[10][C]/ 8.2[11]	Criterion 3 Is there any potentially significant rust or corrosion such that wall thinning, pin holes, or breaches are likely or the load bearing capacity is suspect? 6.1[10][C]/8.2[11]	Criterion 4 Are there any split seams, tears, obvious holes, punctures (of any size), creases, broken welds, or cracks? 6.1[10][C]/8.2[11]	Criterion 5 Is the payload container improperly closed? 6.1[10][C]/ 8.2[11]	Criterion 6 Are there any dents, scrapes, or scratches that make the payload container's structural integrity questionable or prevent the top and bottom surfaces from being parallel? 6.1[10][C]/8.2[11]	Criterion 7 Is there discoloration, which would indicate leakage or other evidence of leakage of material from the payload container? 6.1[10][C]/8.2[11]	Criterion 8 Is the payload container bulged? 6.1[10][C]/ 8.2[11]
	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**
	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**
	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**
	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**
	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**	☐ **YES** ☐ **NO**
	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO

10.1[1] Performed By: _____ / _____ / ____ / ____ / ____
Waste Handling Operator (print) Signature Initial Z # Date

10.1[5] Reviewed By: _____ / _____ / ____ / ____ / ____
PIC (print) Signature Initial Z # Date

ATTACHMENT 4
Page 1 of 1

TRANSPORTAINER TA-54-545/TA-54-546 WASTE CONTAINER INVENTORY SHEET

Transportainer Number: ☐ TA-54-545 ☐ TA-54-546

Waste Container No.	Transportainer Temperature (°F)	Date/Time IN	Date/Time OUT	Initials/Z No.
		/	/	/
		/	/	/
		/	/	/
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Comments: _____

Document Action Request

Section 1 – Originator Request

Document No.: EP-AREAG-WO-DOP-0209	Revision No.: 10
Title: WDP TA-54 Area G TRU Waste Receipt, Storage, and Transfers	Page 1 of 1

Description of requested action (Attach numbered additional sheets if needed.):

Revise step 5.[27] to disposition Myers drums with purchase order numbers 72043, 61068, or 79340. Reformat procedure to the current P315 standards. Made editorial corrections, as necessary.

No new hazards are being introduced as a result of this revision.

Originator Name (print):	Z#:	Organization:	Date:
Steven Retundi	231916	Ops Support	8/30/10

Section 2 – Responsible Manager Approval for Processing

☐ New Procedure	☐ Minor Revision	☐ Deactivation	☒ Perform Concurrent Periodic Review?
	☒ Major Revision	☐ Cancellation	

☒ Approved ☐ Disapproved (return to originator)	Comments:

Signature:	Print Name, Title:	Z#:	Date:
	Mike Romero, TRU Operations Mgr.	106733	9/7/10

Section 3 – Hazard Grading

Hazard Determination: ☐ Low ☒ Moderate ☐ High/Complex

Document is authorized to serve as IWD? ☐ Part I only ☐ Full IWD ☒ N/A

Section 4 – Required Reviews (see P315, Ch 16, Section 16.5.3)

Discipline:	Name:	Signature:	Date:
WDP-OPS	Gail Welsh	/S/ GAIL WELSH	9/1/10
ES-SE	Bob Griffis	/S/ BOB GRIFFIS	9/1/10
QA	Doris Quintana	/S/ DORIS QUINTANA	8/31/10
RP-1	Christine Bullock	/S/ CHRISTINE BULLOCK	8/31/10
IH	Paul Martin	/S/ PAUL MARTIN	8/31/10
SME	Rick Martinez	/S/ RICK MARTINEZ	8/31/10

Validation Required: ☐ Yes ☒ No ☐ Waive Comment:

Scope of Validation: ☐ Entire Procedure ☐ Change Only

Validation Method: ☐ Walkdown ☐ Simulation ☐ Tabletop ☐ First Time Use

Training Determination completed?: ☒ Yes ☐ N/A Completed by: MIKE ROMERO

USQ/USI Number (if needed):	Signature:	Z#:	Date:
AREAG-10-348-D R/1	N/A	N/A	N/A

Section 5 – Final Approvals

☑ Release ☐ Hold Details:

Responsible Manager Signature:	Print Name, Title:	Z#:	Date:
	Michael J. Romero, TRU O.M.	106733	9/7/10
Additional Approval Signature:	Print Name, Title:	Z#:	Date:
N/A	N/A	N/A	N/A

No: P151-1
Revision: 3

Issued: 10/05/10
Effective Date: 10/05/10

LANL Packaging and Transportation Program Procedure

1.0 PURPOSE

This document describes the requirements that will be implemented for hazardous and nonhazardous Packaging and Transportation (P&T). This document identifies the appropriate requirements based on the type of off-site shipment and/or on-site transfer performed.

2.0 AUTHORITY AND APPLICABILITY

2.1 Authority

This document is issued under the authority of the Laboratory Director to direct the management and operation of the Laboratory, as delegated to the Associate Director for Nuclear and High-Hazard Operations (ADNHHO) as provided in the Prime Contract. This document derives from the Laboratory Governing Policies, particularly the section on Safety.

- Issuing Authority (IA): Associate Director for Nuclear and High-Hazard Operations (ADNHHO)
- Responsible Manager (RM): Operations Support-Division Office (OS-DO)
- Responsible Office (RO): Operations Support-Packaging and Transportation (OS-PT)

2.2 Applicability

The requirements identified in this document are applicable to Los Alamos National Laboratory (LANL or the Laboratory) P&T activities according to the type of shipment or transfer being performed. OS-PT is responsible for the development, implementation, and maintenance of P&T requirement documents and has institutional oversight responsibilities for all P&T activities.

This document applies to all personnel working at the Laboratory (including Los Alamos National Security, Limited Liability Company [LANS, LLC] employees, contractors, and official visitors) and all others who:

- offer hazardous materials for transfer or shipment,
- cause a hazardous material to be transported,
- perform pre-transportation and transportation functions for hazardous materials as identified in 49 Code of Federal Regulations (CFR) 171.1, *Applicability of Hazardous Materials Regulations (HMR) to persons and functions*,
- cause hazardous materials to be delivered to the Laboratory from Department of Energy (DOE) suppliers,
- perform as a driver or supervisor subject to 49 CFR 350–399, *Subchapter B—Federal Motor Carrier Safety Regulations* (FMCSRs), and
- perform transportation activities provided by regulated carriers and specified in DOE O 460.1C, *Packaging and Transportation Safety*.

3.0 PROCEDURE DESCRIPTION

This document covers a range of P&T activities for hazardous and nonhazardous materials moved off-site and on-site. Personnel performing P&T activities must comply with the requirements of this document through implementation as presented in the Laboratory P&T training program.

The document is divided into the following functional areas of requirements and guidance associated with the following types of shipments or material movements:

1. General requirements (see Section 3.1)
2. Off-site hazardous material shipments compliant with Department of Transportation (DOT) regulations (see Section 3.2)
3. On-site hazardous material transfers compliant with DOT regulations (see Section 3.3)
4. Transportation activities performed in accordance with Safety Basis Documents and implementing P&T Work Instructions (see Section 3.4)
5. Off-site shipments and on-site transfers of materials of national security interest, which are Category I and Category II Special Nuclear Material (SNM), nuclear components, and special assemblies. (see Section 3.5)
6. P&T activities compliant with FMCSR, DOE Orders, and DOT Regulations (see Section 3.6)
7. Transfer activities for radioactive material below the DOT-regulated threshold (see Section 3.7)
8. Other special and unique requirements (see Section 3.8)
9. Waste shipments (see Section 3.9)
10. Receipt of hazardous materials from DOE suppliers (see Section 3.10)
11. Traffic management duties with regard to nonhazardous materials (see Section 3.11)

3.1 General Requirements

1. OS-PT will ensure through training, oversight, and assessments that established P&T programs at the Laboratory meet regulations as applicable.
2. Before a shipment or transfer, the shipping papers for hazardous materials must be reviewed and approved by OS-PT or a Laboratory worker who has been approved as an Authorized Shipper by OS-PT. For guidance or clarification, contact OS-PT.
3. All organizations, facilities, groups, or personnel that schedule, perform, or coordinate the shipment or transfer of hazardous materials between sites at the Laboratory must ensure before initiation that the shipment or transfer is entered into the *P&T Institutional Plan of the Day* (a database that helps facilitate Laboratory-wide coordination of hazardous material transfers and shipments). On-site transfers are those moved on roads where public access is restricted, controlled, or denied through barriers or controlled access points; all others are considered off-site shipments. For guidance or clarification, contact OS-PT.
4. Hazardous materials must not be transported on-site or off-site in a private vehicle. Some off-site P&T activities may require the use of a rental vehicle. Contact OS-PT to ensure that all additional requirements are met.

5. If a facility-specific Documented Safety Analysis (DSA) does not address facility transportation activities, then the transferring of hazardous material must be conducted in accordance with 49 CFR, *Transportation*, (including FMCSR), or P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision).
6. The line organization performing any of the activities listed in Section 2.2 above must develop and submit a procedure for OS-PT review and concurrence before implementation of any of the listed activities.
7. All official communications external to the Laboratory concerning P&T activities must be coordinated through OS-PT.

   This includes incident notification required in 49 CFR 171.16, *Detailed Hazardous Materials Incident Reports*, and 40 CFR 302.6, *Environmental Protection Agency, Notification Requirements*.

   OS-PT requires a unified institutional posture and one-voice communication for the Laboratory P&T program. Organizations must inform OS-PT of campaigns that require any special transportation or packaging support at an early stage in order to meet this requirement.
8. Specific restrictions, limitations, and prohibitions for on-site transfers and off-site shipments of hazardous material are required when the Laboratory goes into Security Condition (SECON) 2 or higher. SECON 2 or higher requires the use of Form 1899, *Heightened Security Transport Request Form*. The *LANL Transportation Security Plan* (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov) assesses the security risks associated with shipping the hazardous materials listed in 49 CFR 172.800, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Safety and Security Plans—Purpose and Applicability,* and includes the appropriate measures to address these risks.
9. Procurement or lease of hazardous materials packagings for transport must use OS-PT approved written procurement specifications and inspection plans. Packaging procurement must meet the quality requirements of P&T-PLAN-025, *Quality Management Plan for P&T* (latest revision) (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov), and P840-1, *Procurement Quality*.
10. DOT general requirements 49 CFR, FMCSR, the hazardous materials transportation-related aspects of 40 CFR 260-299, *Environmental Protection Agency*, and 15 CFR 53.2601-2692, *Toxic Substances Control*, always apply to off-site transportation activities. Non-compliance with 40 CFR, *Protection of Environment*, and FMCSR may occur only for on-site transfers performed in accordance with the Laboratory TSD/Technical Safety Requirements [TSRs] or for facility-specific P&T activities having a facility DSA which is approved by the National Nuclear Security Administration (NNSA) and that addresses facility P&T activities. In these instances, DOE Order requirements apply (see Sections 3.4–3.9).

Table 1 provides regulatory references for use in the identification and packaging of hazardous materials for DOT-compliant shipments and transfers, and for non-compliant on-site transfers. Contact OS-PT for additional guidance and assistance.

Table 1. Material Characteristic and Packaging Requirements		
	Applicable Requirements	
Topic	**Department of Transportation (DOT) Compliant**	**On-Site Transportation Safety Document (TSD)**
Class 1		
Explosives	Material Definition according to 49 CFR 173 Subpart C (173.50-173.63), *Shippers—General Requirements for Shipments and Packagings, Definitions, Classification and Packaging for Class 1*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173 Subpart C (173.50-173.63), or 49 CFR 172.101, P101-8, *Explosives Safety* Packaging according to DOE O 461.1A, *Packaging and Transfer or Transportation of Materials of National Security Interest*, and/or DOE M 440.1-1A, *DOE Explosives Safety Manual* P&T-AP-021, *High Explosives Shipment Routing (Chemistry and Metallurgy Research [CMR] TSR-AC 5.6.2)*
Class 2		
Division 2.1 Flammable Gas	Material Definition according to 49 CFR 173.115(a), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (a) Division 2.1 (Flammable Gas)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.115(a), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14

Table 1. Material Characteristic and Packaging Requirements		
	Applicable Requirements	
Topic	**Department of Transportation (DOT) Compliant**	**On-Site Transportation Safety Document (TSD)**
Class 2 (Cont.)		
Division 2.2 Non-flammable, non-poisonous, compressed gas	Material Definition according to 49 CFR 173.115(b), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (b) Division 2.2 (non-flammable, non-poisonous, compressed gas—including compressed gas, liquefied gas, pressurized cryogenic gas, compressed gas in solution, asphyxiant gas and oxidizing gas),* or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.115(b), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Division 2.3 Gas poisonous by inhalation	49 CFR 173.115(c), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (c) Division 2.3 (Gas poisonous by inhalation)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.115(c), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Class 3		
Flammable Liquid	Material Definition according to 49 CFR 173.120, *Shippers—General Requirements for Shipments and Packagings, Class 3—Definitions, (a) Flammable Liquid*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.120, or 49 CFR 172.101 Packaging according P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14

Table 1. Material Characteristic and Packaging Requirements		
	Applicable Requirements	
Topic	**Department of Transportation (DOT) Compliant**	**On-Site Transportation Safety Document (TSD)**
Class 4		
Division 4.1 Flammable Solid	Material Definition according to 49 CFR 173.124(a), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (a) Division 4.1, (Flammable Solid)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.124(a), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Division 4.2 Spontaneously Combustible Material	Material Definition according to 49 CFR 173.124(b), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (b) Division 4.2, (Spontaneously Combustible Material)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.124(b), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Division 4.3 Dangerous When Wet	Material Definition according to 49 CFR 173.124(c), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (c) Division 4.3 (Dangerous when wet material)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.124(c), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14

Table 1. Material Characteristic and Packaging Requirements		
	Applicable Requirements	
Topic	**Department of Transportation (DOT) Compliant**	**On-Site Transportation Safety Document (TSD)**
Class 5		
Division 5.1 Oxidizer	Material Definition according to 49 CFR 173.127, *Shippers—General Requirements for Shipments and Packagings, Class 5, Division 5.1—Definition and assignment of packing groups*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.127, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Division 5.2 Organic Peroxide	Material Definition according to 49 CFR 173.128, *Shippers—General Requirements for Shipments and Packagings, Class 5, Division 5.2—Definitions and types*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.128, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Class 6		
Division 6.1 Poisonous Material	Material Definition according to 49 CFR 173.132, *Shippers—General Requirements for Shipments and Packagings, Class 6, Division 6.1—Definitions*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.132, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14

Table 1. Material Characteristic and Packaging Requirements		
Topic	**Applicable Requirements**	
	Department of Transportation (DOT) Compliant	**On-Site Transportation Safety Document (TSD)**
Class 6 (Cont.)		
Division 6.2 Infectious Substance	Material Definition according to 49 CFR 173.134, *Shippers—General Requirements for Shipments and Packagings, Class 6, Division 6.2—Definitions and exceptions*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.134, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Class 7		
Radioactive	Material Definition according to 49 CFR 173.433, *Shippers—General Requirements for Shipments and Packagings, Requirements for determining basic radionuclide values, and for the listing of radionuclides on shipping papers and labels*, and 49 CFR 173.436, *Shippers—General Requirements for Shipments and Packagings, Exempt material activity concentrations and exempt consignment activity limits for radionuclides** Packaging according to Columns 5 and 8 of 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions*	Material Definition according to 49 CFR 173.433 and 49 CFR 173.436 Packaging according to: ▪ P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision) ▪ P&T-TSR-001, *Technical Safety Requirements* (latest revision) ▪ SER TSD.01, *Safety Evaluation Report Approving Los Alamos National Laboratory (LANL) Transportation Safety Document (TSD)* (latest revision)
* Requirements of P121, *Radiation Protection,* also apply.		

Table 1. Material Characteristic and Packaging Requirements		
Topic	**Applicable Requirements**	
	Department of Transportation (DOT) Compliant	**On-Site Transportation Safety Document (TSD)**
Class 8		
Corrosive	Material Definition according to 49 CFR 173.136, *Shippers—General Requirements for Shipments and Packagings, Class 8—Definitions*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101, and 49 CFR 173.137, *Shippers—General Requirements for Shipments and Packagings, Class 8—Assignment of packing group*	Material Definition according to 49 CFR 173.136, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Class 9		
Miscellaneous	Material Definition according to 49 CFR 173.140, *Shippers—General Requirements for Shipments and Packagings, Class 9—Definitions*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.140, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Other Regulated Materials (ORMs)	Material Definition according to 49 CFR 173.144, *Shippers—General Requirements for Shipments and Packagings, Other Regulated Materials (ORMs)-Definitions*, and 49 CFR 172.101 No Packaging Specified	Not Applicable
If there are questions regarding applicable requirements, contact Operations Support-Packaging and Transportation (OS-PT).		

Table 2 provides regulatory references that are applicable to all shipments and transfers, and a representative selection of exceptions that are frequently used at the Laboratory.

Table 2. General Requirements for Off-Site and Compliant/Noncompliant On-Site Shipments

Shipment/Transfer Requirement or Exception	Regulatory Reference
Federal Motor Carrier Safety Regulation (FMCSR)	49 CFR 350–399, *Federal Motor Carrier Safety Regulations*
Shipping Papers	49 CFR 172 Subpart C, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Shipping Papers*
Marking	49 CFR 172 Subpart D, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Marking*
Labeling	49 CFR 172 Subpart E, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Labeling*
Placarding	49 CFR 172 Subpart F, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Placarding*
Emergency Response Information	49 CFR 172 Subpart G, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Emergency Response Information*
Training	49 CFR 172 Subpart H, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Training*
Safety And Security Plans	49 CFR 172 Subpart I, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Safety And Security Plans*, (Parts 172.800-804 for highway)
Commonly used exceptions	
Small Quantity Exceptions	49 CFR 173.4, *Shippers—General Requirements for Shipments and Packagings, Small Quantity Exceptions*
Materials of Trade Exceptions	49 CFR 173.8, *Shippers—General Requirements for Shipments and Packagings, Exceptions for non-specification packagings used in intrastate transportation*
Use of packagings authorized under special permits	49 CFR 173.22a, *Shippers—General Requirements for Shipments and Packagings, Use of packagings authorized under special permits*
Excepted packages for limited quantities of Class 7 (radioactive) materials	49 CFR 173.421, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for limited quantities of Class 7 (radioactive) materials*
Excepted packages for radioactive instruments and articles	49 CFR 173.424, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for radioactive instruments and articles*
Excepted packages for articles containing natural uranium or thorium	49 CFR 173.426, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for articles containing natural uranium or thorium*

Table 2. General Requirements for Off-Site and Compliant/Noncompliant On-Site Shipments	
Shipment/Transfer Requirement or Exception	**Regulatory Reference**
Transport requirements for Low Specific Activity (LSA) Class 7 (radioactive) materials and Surface Contaminated Objects (SCO)	49 CFR 173.427, *Shippers—General Requirements for Shipments and Packagings, Transport requirements for low specific activity (LSA) Class 7 (radioactive) materials and surface contaminated objects (SCO)*
Empty Class 7 (radioactive) materials packaging	49 CFR 173.428, *Shippers—General Requirements for Shipments and Packagings, Empty Class 7 (radioactive) materials packaging*
Fissile materials—exceptions	49 CFR 173.453, *Shippers—General Requirements for Shipments and Packagings, Fissile materials—exceptions*
Hazardous Communication for Class 7 Radioactive Material Shipments*	Form 2114, *Hazard Communication for Radioactive Material Shipments*
If there are questions regarding applicable requirements, contact Operations Support-Packaging and Transportation (OS-PT).	
* Required for on-site transfers of radioactive material.	

11. Form 2114, *Hazard Communication for Radioactive Material Shipments*, must be completed and accompany shipping papers for internal (between Technical Areas [TAs] at the Laboratory) shipments of Class 7 radioactive material when the package will be opened at the Laboratory receiving organization.
12. Items and/or empty packagings that are potentially contaminated by explosives are not to be transported on commercial passenger aircraft.

When 49 CFR, *Transportation* and DOE Orders are both applicable to a transportation activity and a conflict is noted, the more stringent of the two requirements must be met.

3.2 Department of Transportation (DOT) Compliant Off-Site Hazardous Material Shipments

All P&T activities in support of off-site shipments must meet 49 CFR, *Transportation* requirements. Personnel performing these activities must be trained and qualified in accordance with the Laboratory Hazardous Materials Packaging and Transportation (HMPT) training program.

Line personnel performing packager and shipper activities, with the intent to ship off-site, must be authorized by OS-PT before performing any P&T activities. Off-site is any area within or outside a DOE site to which the public has free and uncontrolled access; on-site is any area within the boundaries of a DOE site or facility to which access is controlled.

Note: Refer to Table 1 for guidance on applicable 49 CFR requirements associated with the shipment hazard class. In addition, shipping personnel must notify the Emergency Operations Center (EOC) in advance of a scheduled shipment, and must communicate emergency information to the EOC before initiating the shipment.

For each shipment of fissile material or more than Type "A" quantity of radioactive material, the consignee must be notified of the date of the shipment, the expected date of arrival and any special loading or unloading instructions. The consignee is required to notify the shipper by the end of the first working day after the estimated arrival date if the shipment has not been received.

Type "B" packages must be certified by a competent authority, such as DOE or the Nuclear Regulatory Commission (NRC), with a valid Certificate of Compliance or equivalent certification. The package use must comply with all specified requirements and limitations. Type "B" packages authorized under a Safety Analysis Report for Packaging (SARP) must only be used if the Laboratory is an authorized user of the packaging.

National Security Interest shipments of Type "B" quantities of radioactive materials that do not comply with 10 CFR 71, *Packaging and Transportation of Radioactive Material,* requirements will require an Off-Site Transportation Authorization (OTA) and must include a Transportation System Risk Assessment (TSRA) Contact OS-PT for OTA and TSRA development support.

Line organizations that use Type "B" containers in accordance with a Certificate of Compliance or equivalent certification must have implemented a quality-assurance plan that meets the requirements in 10 CFR 71 Subpart H, *Packaging and Transportation of Radioactive Material, Quality Assurance.* If the line organization has its own plan, it must be reviewed and approved by OS-PT. P&T-PLAN-025, *Quality Management Plan for P&T* (latest revision) (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov) can be referenced and implemented.

- P&T-Plan-028, *Type B Quality Assurance Plan* (current revision).

3.3 Department of Transportation (DOT) Compliant On-Site Hazardous Material Transfers

All P&T activities in support of compliant on-site transfers must meet requirements of FMCSR and DOE Orders.

Personnel performing these activities must be trained and qualified in accordance with the Laboratory HMPT training program.

Refer to Table 1 and Table 2 for guidance on applicable 49 CFR, *Transportation*, requirements.

Refer to Section 3.2 for guidance regarding Type "B" radioactive material packaging.

Emergency information must be communicated to OS-PT before a scheduled transfer.

3.4 Transportation Activities Performed in Accordance With Safety Basis Documents

P&T activities regulated by DOE/NNSA Approved Safety Basis Documents are considered nuclear activities and must comply with additional requirements applicable to Laboratory nuclear activities. The documents noted in Section 3.4.2 form the safety basis. The TSD and the TSR (or an NNSA approved facility DSA that addresses facility transportation activities between TAs and areas within the Laboratory) satisfy the safety basis for the transfer of nuclear materials, which is required by 10 CFR 830 Subpart B, *Department of Energy, Safety Basis Requirements*, for transportation of greater than or equal to Hazard Category (HC)-3 quantities of nuclear materials that are not transported in accordance with the requirements of 49 CFR, *Transportation.*

Refer to Table 1 and Table 2 for guidance on applicable 49 CFR and on-site TSD transfer requirements.

3.4.1 Applicability

Applicability of this section is based on the material categorization descriptions contained in the DOE/NNSA-approved safety-basis documents.

Types of materials applicable to safety basis requirements include:

- non-waste radioactive material,
- radioactive waste,
- tritium,
- radioactive solutions/liquids, and
- other hazardous materials (as deemed necessary).

The material quantities and applicable requirements of the safety basis are:

- P&T transfers with ≥HC-3 quantities of nuclear materials must comply with P&T-TSR-001, *Technical Safety Requirements* (latest revision)
- P&T transfers with <HC-3 quantities of nuclear materials and nonnuclear hazardous materials must comply with P&T-SA-002, *Transportation Safety Document (TSD)*, Chapter 14 (latest revision)
- P&T transfers of explosives moved on roads where public access is restricted, controlled, or denied either through barriers or through controlled access points must comply with DOE M 440.1-1A, *DOE Explosives Safety Manual*, Section 16, *Transportation*, and/or DOE O 461.1A, *Packaging and Transfer or Transportation of Materials of National Security Interest*

Any facility that identifies P&T activities in their NNSA-approved DSA may perform their P&T activities in accordance with their own requirements.

3.4.2 Requirements

Line organizations must implement organization-specific procedures in accordance with the following DOE/NNSA approved safety-basis documents:

- SER TSD.01, *Safety Evaluation Report* (latest revision)
- P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision)
- P&T-TSR-001, *Technical Safety Requirements* (latest revision)

3.5 Transportation of Materials of National Security Interest—Off-Site and On-Site

Laboratory line organizations that propose items of national security interest for (off-site) shipment must submit tie-down procedures with supporting analysis to OS-PT for review and approval. OS-PT will coordinate and obtain NNSA concurrence. Tie-down procedures only require initial approval. If a previously approved tie-down procedure is applicable, line organizations must reference the applicable tie-down procedure.

Laboratory line organizations must submit Transportation Shipping Requests using the form titled *US DOE Office of Secure Transportation—Transportation Services Request* (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov). The initial Transportation Shipping Request must be submitted to OS-PT a minimum of 90 days before the proposed shipment date.

All transport of special assemblies for off-site transportation must have a DOE/NNSA Service Center-issued Off-Site Transportation Authorization (OTA) or an exemption that is granted by the Deputy Administrator for Defense Programs.

Laboratory line organizations that use motor vehicles to transfer items of national security interest off-site or on-site must comply with the applicable FMCSR requirements.

Laboratory line organizations must use government or contractor-owned or leased vehicles to perform NNSA off-site transportation operations of material of national security interest and request OS-PT approval for these operations.

3.6 Packaging and Transportation (P&T) Activities Compliant with Federal Motor Carrier Safety Regulation (FMCSR) and Department of Energy (DOE) Orders

OS-PT administers the program that manages implementation of FMCSR at the Laboratory and is the approval authority for qualifying Laboratory drivers subject to these requirements.

Laboratory line organizations that operate a Government or Contractor vehicle (owned or leased) off-site and on-site in performance of contract activities must comply with applicable regulations of 49 CFR, *Transportation,* FMCSR, and applicable state, tribal, and local regulations not preempted by DOT.

Line organizations must ensure that before transporting quantities of placarded explosives or Highway Route Controlled Quantities of Class 7 Radioactive materials, an approved route plan meeting the requirements of 49 CFR 397 Subpart C, *Federal Motor Carrier Safety Administration, DOT, Routing of Non-Radioactive Hazardous Materials*, and 49 CFR 397 Subpart D, *Federal Motor Carrier Safety Administration, DOT, Routing of Class 7 (Radioactive) Materials*, is properly executed. Contact OS-PT for assistance as needed.

Hazardous Material transport is restricted to drivers who possess a Commercial Driver's License (CDL) with the appropriate hazardous material endorsements. CDL drivers must have on file with OS-PT a Driver Qualification File as described in 49 CFR 391.51, *Federal Motor Carrier Safety Administration, DOT, General Requirements for Driver Qualification Files.*

CDL drivers are subject to drug and alcohol testing under a Laboratory-specific DOT testing program.

A CDL driver's Responsible Line Manager (RLM) is responsible for facilitating an alcohol test within two hours of an accident and a controlled substance test within 32 hours of an accident.

A CDL driver's RLM is required by 49 CFR 382.603, *Federal Motor Carrier Safety Administration, DOT, Controlled Substances and Alcohol Use and Testing, Training for Supervisors,* to have 60 minutes of training on controlled substance use and 60 minutes of training on alcohol misuse.

A CDL driver's RLM is responsible for ensuring that the CDL driver's record of on-duty time is recorded and reviewed to ensure compliance with 49 CFR 395, *Federal Motor Carrier Safety Administration, DOT, Hours of Service of Drivers.* The RLM is responsible for identifying Commercial Motor Vehicles used in his/her operation and coordinating current identification with OS-PT.

Training is required for all drivers subject to FMCSR.

See the OS-PT webpage for additional guidance.

3.7 Transfer Activities for Radioactive Material below the Department of Transportation (DOT)-Regulated Threshold

3.7.1 Applicability of Nonregulated Radioactive Materials

Nonregulated radioactive materials are concentrations and/or consignments that are exempt from FMCSR requirements. Nonregulated radioactive materials must still meet the requirements of P121, *Radiation Protection*. All determinations of both DOT-regulated and unregulated radioactive materials must be performed by HMPT-trained and -qualified personnel. OS-PT will support DOT determinations as required upon request. The shipper must provide characterization data for the material to OS-PT.

3.7.2 Requirements

A Radiological Control Technician must perform receipt surveys of radioactive material, as required by P121, *Radiation Protection*.

A Radiological Control Technician must perform receipt surveys of radioactive material shipments when received at the final destination facility and/or the central shipping and receiving warehouse before the shipping vehicle leaves that facility.

Radioactive material must be packaged so that the package integrity is maintained to prevent the release of contamination during transport; higher-risk materials require more robust packaging. The following packing and transportation factors must be considered:

- the package must withstand anticipated mechanical stresses,
- the package's external contamination must be within limits prescribed by P121,
- the package must not contain any free-standing liquids on the exterior surface of the package, and
- the package must be sealed so as to prevent any leak path into or out of the package.

3.8 Transportation Activities with Special and Unique Requirements

3.8.1 Safeguards and Security Requirements

Laboratory organizations must comply with the Laboratory safeguards and security requirements for off-site transportation and on-site transfers. They must also comply with specific requirements contained in the *LANL SECON Implementation Plan*, including the use of Form 1899, *Heightened Security Transport Request Form*.

3.8.2 Off-Site Transportation of Special Assemblies

Off-site transportation of special assemblies must comply with DOE O 461.1A, *Packaging and Transfer or Transportation of materials of National Security Interest*.

3.8.3 Environmental and Other Samples

All sampling activities must undergo a pre-sampling screening process to evaluate the potential or actual presence of DOT-regulated materials. The screening process will include, but not be limited to, the following:

- a review of appropriate Laboratory operating records and documents from the site, or nearby sites,
- a review of appropriate samples previously taken from the site, or nearby sites, and
- a review of any anecdotal information available about the site.

If the site has been sampled previously, and no hazardous materials are indicated, pre-sampling screening will not be required.

The pre-sampling testing will include, but will not be necessarily limited to:

- For radionuclides (Class 7 Radioactive) using available portable equipment to identify the presence and quantity (if possible) of radionuclides.
- For other hazardous materials, use of appropriate portable equipment and field testing techniques to determine the presence and quantity of hazardous materials.

It is recognized that detailed characterization knowledge of a sample will not be known until the analysis of the sample. However, to support determination of the requirements for sample shipment or transfer from the sampling site, all available information must be considered, and a reasonably conservative approach must be used when categorizing and packaging a sample.

Samples known to contain, or suspected of containing, hazardous materials must be classified, packaged, and transported in accordance with DOT HMRs or the TSD.

Samples subjected to the screening provisions above that do not indicate the presence of regulated hazardous materials are not subject to the requirements of the DOT Hazardous Material Regulations. The waste generator should retain any records or documents that show samples do not indicate the presence of hazardous materials in accordance with P1020-1, Laboratory Records Management, and DOE National Archives & Records Administration (NARA) Records Schedules.

The application and results of this methodology for characterization of a sample, and the sampling procedures used to take and control the samples, must be documented and stored as part of a site sampling plan.

3.9 Los Alamos National Laboratory (LANL) Waste Transportation

Off-site shipments and on-site transfers of waste must meet requirements of P930-1, *LANL Waste Acceptance Criteria,* and P930-3, *Off-Site Shipment of Chemical, Hazardous, or Radioactive Waste*.

Effective June 1, 2008, the use of open-top roll-off bins designed to be covered by a tarpaulin will not be allowed for transport of materials to TA-54.

3.10 Receipt of Hazardous Materials from Department of Energy (DOE) Suppliers

All hazardous materials excluding Hazard Class 9 miscellaneous hazardous materials sent to the Laboratory from DOE suppliers must be authorized by the Laboratory before the hazardous material is placed in transit. Authorization is obtained from the OS-PT Service Center through the use of Form 2180, *Hazardous Material/Classified Components Receipt from DOE Facilities* (latest revision), (available from the LANL Forms Center, by calling 664-0765, or by e-mailing lanlran@lanl.gov).

P151-2, *Hazardous Material/Classified Components Receipt from DOE Facilities*, outlines the process and requirements for the receipt of hazardous materials from DOE suppliers.

3.11 Traffic Management

The OS-PT Facility Operations Director (FOD) provides oversight and guidance to ensure traffic management is conducted as specified in DOE Orders, including the following:

- carrier qualification and selection (general freight, hazardous material shipments, and classified material shipments),
- shipment preparation for domestic and international transport, and
- procurement of commercial transport services, including all related functions such as rate analysis, carrier interface, bill payment, claims, and systems.
- all off-site shipments must be coordinated using the automated transportation management system and must be self-insured. If the shipment qualifies as a special circumstance defined by 48 CFR 47.102, *Federal Acquisition Regulation, Transportation, Transportation Insurance*, contact OS-PT before shipping.
- all commercial bills of lading covering shipments made by or to DOE contractors on DOE's behalf must provide for consignment of the shipment as follows:

  TO: US Department of Energy in care of (name of DOE contractor)

  FROM: LANS, LLC on behalf of the US Department of Energy

- the requirements of DOE O 460.2A, *Departmental Materials Transportation and Packaging Management,* must be met.

4.0 RESPONSIBILITIES

4.1 Operations Support-Packaging and Transportation (OS-PT) Facility Operations Director (FOD)

- Ensures that the hazardous materials P&T program is in place and that Laboratory organizations performing P&T activities are in compliance with appropriate requirements.
- Delegates roles and responsibilities to OS-PT; however, the OS-PT FOD retains all accountability for the Laboratory P&T program.

4.2 Operations Support-Packaging and Transportation (OS-PT)

- Supports the OS-PT FOD in administering the Laboratory institutional P&T and FMCSR programs.
- Performs/supports transportation of the following:
  - Materials of national security interest
  - Transfers under the TSD and TSRs
  - Radioactive materials below the DOT regulatory threshold
- Develops, communicates, and implements the Laboratory P&T program policy in compliance with 49 CFR, *Transportation*, DOE Orders, and internal requirements.
- Periodically assesses site organizations to ensure that requirements are understood and implemented.
- Provides Subject Matter Expert (SME) support to Laboratory training organizations in administering the hazardous materials P&T training program.
- Supports Laboratory organizations on P&T activities as requested.
- Develops and maintains the Laboratory P&T program policy and requirements documents.
- Supports Laboratory line organizations with the development of P&T implementing procedures, when requested.
- Reviews and concurs with Laboratory line organizations' implementing procedures.
- Serves as the Laboratory P&T program representative with external organizations, including regulating entities.
- Conveys pertinent changes in regulatory requirements to the Laboratory as they occur.

4.3 Line Organizations

- Ensure that all personnel who support and/or perform packaging, transfer, and transportation operations are trained, qualified, and authorized to perform their assigned functions.
- Develop implementing procedures to meet Laboratory P&T requirements in accordance with an approved Quality Assurance Plan.
- Communicate at an early stage to OS-PT any specific/unique programmatic P&T requirements, including ongoing activities, new campaigns, and outstanding issues.

5.0 IMPLEMENTATION

The requirements in this document are effective on the issue date.

6.0 TRAINING

The training program must comply with the applicable basic hazardous material training requirements of 49 CFR 172 Subpart H, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Training*. Training for FMCSR and hazardous/radioactive materials P&T activities is provided through the Laboratory training organization. Off-site training may be accepted upon completion of an equivalency determination performed by Laboratory training personnel. Contact OS-PT for information.

OS-PT performance evaluations are required for Laboratory personnel designated as "Authorized Shippers, Packagers, and Drivers." RLMs grant the authority to perform HMPT activities and must coordinate those worker authorizations for P&T functions with the OS-PT FOD.

Contact OS-PT for information regarding the Laboratory P&T training program.

7.0 EXCEPTION OR VARIANCE

To obtain an exception or variance to this document, see the following instructions:

- Managers may request an exception or variance from the ADNHHO, through the OS-PT FOD.
- At the ADNHHO's request, the OS-PT FOD will provide a recommendation or supporting information.
- The ADNHHO or designee will provide the requestor with a written response with a copy to the OS-PT FOD.

The requesting organization must maintain the official copy of record of the approved correspondence granting the exception or variance.

8.0 DOCUMENTS AND RECORDS

8.1 Office of Record

The Policy Office is the Laboratory office of record for this institutional document and maintains the administrative record.

OS-PT is the office of record for oversight activities associated with the Laboratory P&T program, including outgoing correspondence and OTA/Off-Site Transportation Certificate (OTC) related documentation.

9.0 DEFINITIONS AND ACRONYMS

9.1 Definitions

See LANL *Definition of Terms*.

9.2 Acronyms

See LANL *Acronym Master List*.

ADNHHO	Associate Director for Nuclear and High-Hazard Operations
CDL	Commercial Driver's License
CFR	Code of Federal Regulation
CMR	Chemistry and Metallurgy Research
DOE	Department of Energy
DOT	Department of Transportation
DSA	Documented Safety Analysis
EOC	Emergency Operations Center
FMCSR	Federal Motor Carrier Safety Regulation
FOD	Facility Operations Director
Hazmat	Hazardous Materials
HC	Hazard Category
HMPT	Hazardous Materials Packaging and Transportation
HMR	Hazardous Materials Regulation

IA	Issuing Authority
IPP	Institutional Policy and Implementation Procedure
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security, LLC
LSA	Low Specific Activity
NARA	National Archives & Records Administration
NNSA	National Nuclear Security Administration
NRC	Nuclear Regulatory Commission
ORM	Other Regulated Material
OS-DO	Operations Support-Division Office
OS-PT	Operations Support-Packaging and Transportation
OTA	Off-Site Transportation Authorization
OTC	Off-Site Transportation Certificate
P&T	Packaging and Transportation
RLM	Responsible Line Manager
RM	Responsible Manager
RO	Responsible Office
SARP	Safety Analysis Report for Packaging
SCO	Surface Contaminated Object
SECON	Security Condition
SER	Safety Evaluation Report
SME	Subject Matter Expert
SNM	Special Nuclear Material
TA	Technical Area
TSD	Transportation Safety Document
TSR	Technical Safety Requirement
TSRA	Transportation System Risk Assessment
USI	Unreviewed Safety Issue
USQ	Unreviewed Safety Question

10.0 HISTORY

Revision History		
05/30/08	P151-1, Rev. 0	Initial Issue. This document replaces and cancels Institutional Policy and Implementation Procedure (IPP) 525.2, *Hazardous Material (Hazmat) Packaging and Transportation.*
03/29/10	P151-1, Rev. 1	Added requirements to be used when receiving hazardous materials from other DOE facilities. Added flowdown requirements from DOE O 460.2A, *Departmental Materials Transportation and Packaging Management.* Fixed links, titles, and acronyms.
06/01/10	P151-1, Rev. 2	Section 5.0 was revised and updated.

Revision History		
10/05/10	P151-1, Rev. 3	Replaced P&T Form-091, *LANL Authorization to Ship* with Form 2180, *Hazardous Material/Classified Components Receipt from DOE Facilities.* Referenced P151-2, *Hazardous Material/Classified Components Receipt from DOE Facilities* for the receipt of hazardous materials from DOE facilities. Deleted requirements under Section 3.10 that are covered in P151-2. In accordance with P311-1, *Creating, Revising, and Cancelling Institutional Documents*, deleted requirement in Section 5.0 for Unreviewed Safety Question/Unreviewed Safety Issue (USQ/USI) review, as this review is not required for an Institutional Document Quick Change.

11.0 REFERENCES

Prime Contract:

- Part III, Section J, Appendix G
- 49 CFR 171.1, *Applicability of Hazardous Materials Regulations (HMR) to persons and functions*
- 49 CFR 350–399, *Federal Motor Carrier Safety Regulations*
- DOE O 460.1C, *Packaging and Transportation Safety*
- 49 CFR, *Transportation*
- 49 CFR 171.16, *Detailed Hazardous Materials Incident Reports*
- 40 CFR 302.6, *Environmental Protection Agency, Notification Requirements*
- 49 CFR 172.800, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Safety and Security Plans—Purpose and Applicability*
- 40 CFR 260-299, *Environmental Protection Agency*
- 15 CFR 53.2601-2692, *Toxic Substances Control*
- 40 CFR, *Protection of Environment*
- 49 CFR 173 Subpart C (173.50-173.63), *Shippers—General Requirements for Shipments and Packagings, Definitions, Classification and Packaging for Class 1*
- 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions*
- DOE O 461.1A, *Packaging and Transfer or Transportation of Materials of National Security Interest*
- DOE M 440.1-1A, *DOE Explosives Safety Manual*
- 49 CFR 173.115(a), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (a) Division 2.1 (Flammable Gas)*
- 49 CFR 173.115(b), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (b) Division 2.2 (non-flammable, non-poisonous, compressed gas—including compressed gas, liquefied gas, pressurized cryogenic gas, compressed gas in solution, asphyxiant gas and oxidizing gas)*

- 49 CFR 173.115(c), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (c) Division 2.3 (Gas poisonous by inhalation)*
- 49 CFR 173.120, *Shippers—General Requirements for Shipments and Packagings, Class 3—Definitions, (a) Flammable Liquid*
- 49 CFR 173.124(a), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (a) Division 4.1, (Flammable Solid)*
- 49 CFR 173.124(b), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (b) Division 4.2, (Spontaneously Combustible Material)*
- 49 CFR 173.124(c), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (c) Division 4.3 (Dangerous when wet material)*
- 49 CFR 173.127, *Shippers—General Requirements for Shipments and Packagings, Class 5, Division 5.1—Definition and assignment of packing groups*
- 49 CFR 173.128, *Shippers—General Requirements for Shipments and Packagings, Class 5, Division 5.2—Definitions and types*
- 49 CFR 173.132, *Shippers—General Requirements for Shipments and Packagings, Class 6, Division 6.1—Definitions*
- 49 CFR 173.134, *Shippers—General Requirements for Shipments and Packagings, Class 6, Division 6.2—Definitions and exceptions*
- 49 CFR 173.433, *Shippers—General Requirements for Shipments and Packagings Requirements for determining basic radionuclide values, and for the listing of radionuclides on shipping papers and labels*
- 49 CFR 173.436, *Shippers—General Requirements for Shipments and Packagings, Exempt material activity concentrations and exempt consignment activity limits for radionuclides*
- 49 CFR 173.136, *Shippers—General Requirements for Shipments and Packagings, Class 8—Definition*
- 49 CFR 173.137, *Shippers—General Requirements for Shipments and Packagings Class 8—Assignment of packing group*
- 49 CFR 173.140, *Shippers—General Requirements for Shipments and Packagings, Class 9—Definitions*
- 49 CFR 173.144, *Shippers—General Requirements for Shipments and Packagings, Other Regulated Materials (ORMs)-Definitions*
- 49 CFR 172 Subpart C, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Shipping Papers*
- 49 CFR 172 Subpart D, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Marking*
- 49 CFR 172 Subpart E, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Labeling*
- 49 CFR 172 Subpart F, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Placarding*
- 49 CFR 172 Subpart G, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Emergency Response Information*

- 49 CFR 172 Subpart H, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Training*
- 49 CFR 172 Subpart I, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Safety And Security Plans*, (parts 172.800-804 for highway)
- 49 CFR 173.4, *Shippers—General Requirements for Shipments and Packagings, Small Quantity Exceptions*
- 49 CFR 173.8, *Shippers—General Requirements for Shipments and Packagings, Exceptions for non-specification packagings used in intrastate transportation*
- 49 CFR 173.22a, *Shippers—General Requirements for Shipments and Packagings, Use of packagings authorized under special permits*
- 49 CFR 173.421, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for limited quantities of Class 7 (radioactive) materials*
- 49 CFR 173.424, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for radioactive instruments and articles*
- 49 CFR 173.426, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for articles containing natural uranium or thorium*
- 49 CFR 173.427, *Shippers—General Requirements for Shipments and Packagings, Transport requirements for low specific activity (LSA) Class 7 (radioactive) materials and surface contaminated objects (SCO)*
- 49 CFR 173.428, *Shippers—General Requirements for Shipments and Packagings, Empty Class 7 (radioactive) materials packaging*
- 49 CFR 173.453, *Shippers—General Requirements for Shipments and Packagings, Fissile materials—exceptions*
- 10 CFR 71, *Packaging and Transportation of Radioactive Material*
- 10 CFR 71 Subpart H, *Packaging and Transportation of Radioactive Material, Quality Assurance*
- 10 CFR 830 Subpart B, *Department of Energy, Safety Basis Requirements*
- 49 CFR 397 Subpart C, *Federal Motor Carrier Safety Administration, DOT, Routing of Non-Radioactive Hazardous Materials*
- 49 CFR 397 Subpart D, *Federal Motor Carrier Safety Administration, DOT, Routing of Class 7 (Radioactive) Materials*
- 49 CFR 391.51, *Federal Motor Carrier Safety Administration, DOT, General Requirements for Driver Qualification Files*
- 49 CFR 382.603, *Federal Motor Carrier Safety Administration, DOT, Controlled Substances and Alcohol Use and Testing, Training for Supervisors*
- 49 CFR 395, *Federal Motor Carrier Safety Administration, DOT, Hours of Service of Drivers*
- 48 CFR 47.102, *Federal Acquisition Regulation, Transportation, Transportation Insurance*
- DOE O 460.2A, *Departmental Materials Transportation and Packaging Management*

11.1 Other References

- *P&T Institutional Plan of the Day*
- P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision)
- *LANL Transportation Security Plan* (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov)
- P&T-PLAN-025, *Quality Management Plan for P&T* (latest revision) (available from the P&T Service Center)
- P840-1, *Procurement Quality*
- P101-8, *Explosives Safety*
- P&T-AP-021, *High Explosives Shipment Routing (Chemistry and Metallurgy Research [CMR] TSR-AC 5.6.2)*
- P&T-TSR-001, *Technical Safety Requirements* (latest revision)
- SER TSD.01, *Safety Evaluation Report* (latest revision)
- P121, *Radiation Protection*
- P&T-Plan-028, *Type B Quality Assurance Plan* (current revision)
- OS-PT webpage
- *LANL SECON Implementation Plan*
- P1020-1, *Laboratory Records Management*
- P930-1, *LANL Waste Acceptance Criteria*
- P930-3, *Off-Site Shipment of Chemical, Hazardous, or Radioactive Waste*
- P151-2, *Hazardous Material/Classified Components Receipt from DOE Facilities*
- P311-1, *Creating, Revising, and Cancelling Institutional Documents*

12.0 FORMS

Form 1899, *Heightened Security Transport Request Form*
Form 2114, *Hazard Communication for Radioactive Material Shipments*
US DOE Office of Secure Transportation—Transportation Shipping Request (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov)
Form 2180, *Hazardous Material/Classified Components Receipt from DOE Facilities*
Form 1458, *Excepted Package Form*
Form 1468, *Hazardous Materials Transfer (other than radioactive)*
Form 1586, *Radioactive Materials Transfer*
Form 1586-con, *Radioactive Materials Transfer–Continuation Page*
Form 1686, *Express Document Shipment Request* (for shipping FedEx documents)
Form 1768, *Shipping Request* (for shipping materials)

13.0 ATTACHMENTS

There are no attachments associated with this document.

14.0 CONTACT

Operations Support-Packaging and Transportation Group (OS-PT)
Telephone: (505) 665-8628
Fax: (505) 667-9829
Location: TA-3, Building 30, Room W133E
E-mail: pnt@lanl.gov

EP-DIV-AP-0107, R. 1

WDP TRU Waste Container Management Operations

Effective Date: 08/03/10

Next Review Date: 08/03/2013

Procedure Owner:	Signature:	Date:
Mark Shepard	M Shepard	3/29/2010

This document fully satisfies the requirements of P300, Integrated Work Management, in order to systematically describe the work activity, the associated hazards, and the controls that **MUST** be employed to mitigate the risks.

HISTORY OF REVISIONS

Document No./Revision No.	Issue Date	Action	Description
EP-DIV-AP-19, Rev. 0	May 07, 2009	New Document	This document describes the administrative management, physical movement control, and tracking of TRU waste containers during the handling, characterization, remediation, and transportation processes conducted at LANL to ensure compliance with MAR limits. Supersedes TRU-AP-1001. No hazards identified with the performance of this procedure (administrative procedure).
EP-DIV-AP-0107, Rev. 0	December 14, 2009	Major Revision	Revised procedure to incorporate the requirements of EP-SO-1701, WCRRF and Area G Operations Personnel. Incorporated checklist for performing a safety evaluation of waste containers to be processed at WCRRF or Area G by production control, engineering, and operations personnel. Incorporated editorial corrections as necessary. Added additional detail for existing instructions. This revision does not introduce any new hazards.
EP-DIV-AP-0107, Rev.1	August 3, 2010	Minor Revision	Update job title for TRU Operators; differentiate TRU Remediation Operators Re-title Appendix 3 as Attachment 1 Add reference to transfer procedure Add isotopes to Appendix 2; make minor revisions to Attachment I and label it as a **sample** data sheet Make editorial changes This revision does not introduce any new hazards.

TABLE OF CONTENTS

1. PURPOSE

Los Alamos National Laboratory (LANL) Waste Disposition Project (WDP) Production Control (PC) personnel support the selection, handling, characterization, remediation, and transportation of transuranic (TRU) waste containers to satisfy the requirements for shipment to and disposal at the Waste Isolation Pilot Plant (WIPP). These activities are performed at Technical Area (TA) 54, Area G; the Radioassay and Non-Destructive Testing (RANT) facility (TA-54-38); and the Waste Characterization, Reduction, and Repackaging Facility (WCRRF) (TA-50-69).

The purpose of this procedure is to describe the administrative management, physical movement control, and tracking of TRU waste containers during the selection, handling, characterization, remediation, and transportation processes conducted at LANL to ensure compliance with material at risk (MAR) limits.

2. SCOPE

This procedure applies to the management of TRU waste containers associated with the selection, handling, characterization, remediation, and transportation processes at Area G, RANT, and WCRRF by PC personnel. It also applies to empty containers that are generated from TRU waste operations.

TRU waste containers that are characterized as Low-Level Waste (LLW) are managed in accordance with EP-PLAN-2115, TRU Waste Reclassified Operations.

3. REFERENCES

AP-2101, Implementing Instructions for New Characterization Information Regarding Containers Greater Than 200 Pu-239 Fissile Gram Equivalents

CCP-QP-005, NCR Reporting

CCP-TP-033, CCP Shipping of CH TRU Waste

EP-AREAG-WO-DOP-0201, TA-54 Area G Unvented TRU Waste Container Handling and Storage

EP-AREAG-WO-DOP-0209, WDP TA-54 Area G TRU Waste Receipt, Storage, and Transfers

EP-AREAG-WO-DOP-0219, Dome 231 PermaCon Prohibited Item Disposition

EP-DIR-SOP-4004, Record Transmittal and Retrieval Process

EP-PLAN-2115, TRU Waste Reclassified Operations

EP-RANT FOB-DOP-0203, Receipt of TRU Waste Containers at RANT

EP-TRU-DOP-2103, TRU Waste Container Movement for Retrieval of High Fissile Gram Equivalent (FGE) Containers from TA-54, Area G

P101-18, Procedure for Pause/Stop Work

4. PRECAUTIONS AND LIMITATIONS

- Activities, items, and containers **SHALL** satisfy approved design specifications, regulatory requirements, process-specific parameters, and procedural requirements. Activities, items, or containers that do **NOT** conform to the approved specifications and requirements are considered nonconforming, and Nonconformance Reports (NCRs) **SHALL** be generated in accordance with P330-6, Nonconformance Reporting.
- The activities performed in accordance with this procedure are determined to be low hazard, as defined by P300, Integrated Work Management; therefore, no hazard analysis is required to perform this procedure. (Transfer of containers referred to in this procedure is done in accordance with EP-AREAG-WO-DOP-0209, WDP TA-54 Area G TRU Waste Receipt, Storage, and Transfers, which has its own Job Hazard Analysis.)
- When a worker observes an unsafe condition or act that may pose an imminent danger or other safety concern/hazard, the worker has the authority and responsibility to inform the worker engaged in the work and request that the work activity be paused and/or stopped based on the risk posed to the individual, the employees, the environment, or the facility in accordance with P101-18, Procedure for Pause/Stop Work.

5. PREREQUISITES

5.1 Planning and Coordination

Supervision

[1] **ENSURE** that the latest revision of this procedure is being used.

[2] **ENSURE** that individuals from the following groups trained to this procedure are available for performance of this procedure, as required:

- Production Control (PC)
- Engineering
- Waste Generator
- TRU Operator
- TRU Remediation Operator
- Radiological Control Technician (RCT)
- Central Characterization Project (CCP)
- Low-Level Waste Disposition (LLWD)
- Waste and Environmental Support – Waste Acceptance (WES-WA)
- Transportation Certification Official (TCO)
- Operations Support – Packaging and Transportation (OS-PT)

6. WASTE CONTAINER WIPP CERTIFICATION PROCESS

This section provides instructions for certifying waste containers to be shipped to WIPP for disposal.

6.1 Non Destructive Examination (NDE)

PC Personnel

[1] **REVIEW** and **EVALUATE** the status of waste containers available for characterization before shipment to WIPP.

[2] **GENERATE** a set of waste containers to be processed at the real-time radiography (RTR) unit from the evaluated waste containers.

NOTE *Waste containers being transferred to the RTR staging area are sent to a weigh station before being transferred to the RTR staging area.*

[3] **GENERATE** a TRU Transfer Request using the TRU Transfer Application system to request a transfer of the waste containers from storage to be weighed and then to the RTR staging area.

NOTE 1 *TRU Operators transfer waste containers from storage to the weigh station and CCP transfers the waste containers from the weigh station to the RTR staging area.*

NOTE 2 *All waste container transfers are performed in accordance with EP-AREAG-WO-DOP-0209, WDP TA-54 Area G TRU Waste Receipt, Storage, and Transfers*

TRU Operator

[4] **MINE** (retrieve) and **TRANSFER** the identified waste containers to the weigh station.

[5] **WHEN** the transfer is complete,
THEN NOTIFY the PC personnel of the status of the waste containers.

CCP NDE Operations Personnel

[6] **TRANSFER** the waste containers to the RTR staging area, and **CHARACTERIZE** the waste containers using the RTR analysis.

6.1 Non Destructive Examination (NDE) (continued)

NOTE *Steps 6.1[7] and 6.1[8] may be performed concurrently.*

[7] **IF** a waste container fails the RTR analysis (does **NOT** satisfy the WIPP Waste Acceptance Criteria),
THEN

[A] **INITIATE** a non-conformance report (NCR) for the waste container in accordance with CCP-QP-005, NCR Reporting.

[B] **NOTIFY** PC personnel of the waste containers that failed the RTR analysis.

PC Personnel

[C] **EVALUATE** the failed waste container's NCR condition for the proper routing and segregation.

[D] **REQUEST** that TRU Operator transfer the failed waste containers to a storage area.

TRU Operator

[E] **TRANSFER** the failed waste containers to storage.

CCP NDE Operations Personnel

[8] **IF** any of the following materials are observed during the NDE process:

- Lead
- Lead acid batteries
- Elemental mercury
- PCBs
- Pressurized-sealed containers

THEN NOTIFY the TRU Waste Operations Manager or designee of the materials identified.

6.1 Non Destructive Examination (NDE) (continued)

NOTE *The following step identifies discrepancies between the information captured in the TRU Waste Database and the material observed in waste containers in order to determine whether the waste container constituents are appropriately identified.*

TRU Waste Operations Manager or designee

[9] **REQUEST** that the Environmental Protection – Ecology & Air Quality (ENV-EAQ) representative evaluate the materials discovered in the waste container against the current TRU Waste Database information for the waste container.

ENV-EAQ Representative

[10] **EVALUATE** the materials discovered in the identified waste containers against the current TRU Waste Database information for the waste containers.

[11] **IF** a discrepancy between the TRU Waste Database and the discovered materials exists, **THEN INITIATE** actions to correct the TRU Waste Database (SWO-5199, Use Of The TRU Waste Storage Record Change Form) and to correct the waste container labeling.

[12] **NOTIFY** the TRU Waste Operations Manager or designee of the results of the determination and of any actions taken.

TRU Waste Operations Manager or designee

[13] **ENSURE** that the ENV-EAQ representative evaluate the materials discovered in the waste container against the current TRU Waste Database information for the waste container.

CCP NDE Operations Personnel

[14] **TRANSFER** the waste containers that pass RTR to non-destructive assay (NDA).

6.2 Non-Destructive Assay (NDA)

CCP NDA Operations Personnel

[1] **CHARACTERIZE** the waste containers using the NDA analysis.

[2] **IF** a waste container fails the NDA analysis (does **NOT** satisfy the WIPP Waste Acceptance Criteria),
THEN

[A] **IF** the waste container is suspected of containing greater than 200 FGE Pu-239 equivalent,
THEN INITIATE the actions of AP-2101, Implementing Instructions for New Characterization Information Regarding Containers Greater Than 200 Pu-239 Fissile Gram Equivalents.

[B] **INITIATE** a NCR for the waste container in accordance with CCP-QP-005.

[C] **NOTIFY** PC personnel of the waste containers that failed the NDA analysis.

PC Personnel

[D] **EVALUATE** the failed waste container's NCR condition to determine the proper routing and segregation.

[E] **REQUEST** that TRU Operator transfer failed waste containers which are greater than 200 FGE to the high FGE storage area in accordance with EP-TRU-DOP-2103, TRU Waste Container Movement for Retrieval of High Fissile Gram Equivalent (FGE) Containers from TA-54, Area G.

[F] **REQUEST** that TRU Operator transfer failed waste containers which are less than or equal to 200 FGE to a storage area.

TRU Operator

[G] **TRANSFER** the failed waste containers to the appropriate storage area.

6.2 Non-Destructive Assay (NDA) (continued)

NOTE *Steps 6.2[3] and 6.2[4] may be performed concurrently.*

PC Personnel

[3] **IF** a container waste stream requires a FLAM GAS analysis,
THEN

[A] **GENERATE** a TRU Transfer Request for transferring the waste containers from NDA to the in-staging area for FLAM GAS analysis.

TRU Operator

[B] **TRANSFER** the waste containers that passed the NDA analysis and require a FLAM GAS analysis to the in-staging area for FLAM GAS analysis.

CCP Personnel

[4] **REQUEST** a Radiological Control Technician (RCT) perform a 5-point radiological survey on waste containers that passed the NDA analysis and do **NOT** require a FLAM GAS analysis.

RCT

[5] **PERFORM** a 5-point radiological survey on each of the waste containers to be transferred to the ship-to-WIPP staging area.

CCP Personnel

[6] **WHEN** the 5-point radiological survey of the waste containers is complete,
THEN NOTIFY Production Control personnel of the completed survey.

PC Personnel

[7] **REQUEST** that TRU Operator transfer the surveyed waste containers which passed the NDA analysis and which do **NOT** require a FLAM GAS analysis to the ship-to-WIPP staging area.

TRU Operator

[8] **TRANSFER** the waste containers that passed the NDA analysis and do **NOT** require a FLAM GAS analysis to the ship-to-WIPP staging area.

6.3 FLAM GAS Analysis

CCP FLAM GAS Personnel

[1] **CHARACTERIZE** the waste containers using the FLAM GAS analysis.

[2] **MOVE** the waste containers that have completed the FLAM GAS analysis to the FLAM GAS analysis out-staging area.

[3] **NOTIFY** an RCT and TRU Operator that the FLAM GAS analysis is complete and that the waste containers have been placed in the FLAM GAS analysis out-staging area.

[4] **IF** a waste container fails the FLAM GAS analysis,
THEN NOTIFY the TRU Operations Manager or designee of the failure.

RCT Personnel

[5] **PERFORM** a 5-point radiological survey on each of the waste containers.

[6] **WHEN** the 5-point radiological survey of the wastes containers is complete,
THEN NOTIFY the TRU Operator of the status of the waste containers.

NOTE *A waste container headspace gas sample resulting in a hydrogen concentration of greater than or equal to 3.2% or resulting in a organic compounds (VOC) concentration of greater than or equal to 7,000 ppm is considered an unvented waste container and is handled in accordance with EP-AREAG-WO-DOP-0201, TA-54 Area G Unvented TRU Waste Container Handling and Storage.*

TRU Operator

[7] **IF** a waste container fails the FLAM GAS analysis,
THEN TRANSFER the waste container to a location designated by supervision.

[8] **TRANSFER** the waste containers that passed the FLAM GAS analysis to the ship-to-WIPP staging area.

7. TRU WASTE REMEDIATION

Appendix 1, WDP Waste Container Remediation Determination Flowchart, illustrates the process for the disposition of waste containers with debris waste.

NOTE 1 *Attachment 1, WDP Waste Container Remediation Safety Evaluation Data Sheet (sometimes referred to as SEDS) is to be distributed and controlled by the PC personnel in order to ensure that waste container data is processed efficiently.*

NOTE 2 *Empty waste containers from processing operations are dispositioned in accordance with Section 9, Empty Waste Container Disposition.*

PC Personnel

[1] **GENERATE** a list of waste containers requiring remediation.

[2] **GENERATE** one Attachment 1, WDP Waste Remediation Safety Evaluation Data Sheet for each waste container.

NOTE *The waste container evaluation performed in Steps 7.[3] through 7.[30] may be performed independent of performing this entire section in order to improve productivity.*

[3] **REVIEW** and **EVALUATE** each Attachment 1 for constituents/safety hazards that might prevent the processing of the waste container, such as:

- Beryllium
- Asbestos
- Americium
- Tritium
- Mixed Fission Products (MFP)
- Heavy objects
- Prior non-destructive examination results
- Presence of internal containers, impenetrable objects, or other items **NOT** allowed
- Any other condition that would pose a potential safety hazard to personnel

[4] **CHECK** (√) the applicable boxes on Attachment 1 to indicate the security determination (Green or Yellow) and the remediation determination (VE, PID, Split, or Repack).

7. TRU WASTE REMEDIATION (continued)

[5] **ENSURE** that any available RTR Batch Data Report (BDR) has been attached to the applicable Attachment 1.

NOTE *Isotopic Breakdown Report is extracted from the Waste Management Database Application*

[6] **PRINT** and **ATTACH** a copy of the TRU waste container Isotopic Breakdown Report to each Attachment 1.

[7] **DETERMINE** the Highest Anticipated Radiation Dose Rate by comparing the total grams of each isotope identified on the Isotopic Breakdown Report with the information on Appendix 2, WDP Dose Rate Table.

[8] **CHECK** (√) the applicable Dose Rate box on Attachment 1.

[9] **INDICATE** the TRUCON code on Attachment 1.

[10] **ENTER** name, signature, Z number and date on each Attachment 1.

[11] **FORWARD** each Attachment 1 to WDP Engineering for review.

WDP Engineering

[12] **PREPARE** an isotropic breakdown list for the TRU waste containers to be remediated at WCRRF, Dome 231 Permacon, or Building 412.

[13] **FORWARD** the isotropic breakdown list to the RP-1 Health Physicist for review.

RP-1 Health Physicist

[14] **REVIEW** the isotropic breakdown list to ensure the radiological monitoring controls in place are adequate to safely process these waste containers.

[15] **REPORT** their findings to PC Personnel and WDP engineering.

NOTE *WDP Engineering may proceed with step [16] independently of the completion of steps [14] and [15].*

7. TRU WASTE REMEDIATION (continued)

WDP Engineering

[16] **REVIEW** at least the following available data for the waste container to determine whether any safety risks, such as chemicals (for example, pyrophoric, acids, bases, shock sensitive, organic liquids, peroxides, crown ethers) or bulging or deformed containers are present, and **CHECK** (√) YES, NO, or UNKNOWN, as appropriate, and **DOCUMENT** any specific safety risks on Attachment 1.

- Batch Data Report (BDR) from the WIPP Package Tracking System database
- FileMaker Pro database NMT71NV1_18 Converted Copy.fp7 (\\win\nwis\Projects\TRUProductionControls\ArchivedData\FileMakerDB)
- TWSR Master Inventory (Master TWSR index 072805.xls) field IFIELD1 (\\win\nwis\Projects\TRUProductionContols\ArchivedData\MasterTWSRIndex)

[17] **EVALUATE** the available information (for example, WDP Waste Remediation Safety Evaluation Data Sheet, RTR BDR, and Isotopic Breakdown Report) for the waste container, and **CHECK** (√) ACCEPT or REJECT on Attachment 1.

[18] **IF** REJECT was checked (√) in the previous step,
THEN DOCUMENT the reason for checking (√) REJECT in the WDP Engineering Comments section of Attachment 1.

[19] **ENTER** name, signature, Z number and date on each Attachment 1.

[20] **RETURN** each signed Attachment 1 to the PC personnel.

PC Personnel

[21] **IF** a waste container was rejected by WDP Engineering,
THEN

[A] **IDENTIFY** (for example, tag or mark) the rejected waste container indicating the drum has been rejected for remediation.

[B] **SEGREGATE** the waste container in order to prevent the remediation of the waste container.

NOTE *NCR may be initiated at an operationally convenient time.*

[C] **INITIATE** an NCR in accordance with P330-6, Nonconformance Reporting, as required.

7. TRU WASTE REMEDIATION (continued)

[22] **FORWARD** the Attachment 1 for each accepted waste container to the TRU Remediation Operator.

TRU Remediation Operator

[23] **REVIEW** and **EVALUATE** the available information (for example, Attachment 1, RTR BDR, and Isotopic Breakdown Report) for the waste container, and **DOCUMENT** the results of the review on each Attachment 1.

[24] **IF** an evaluated waste container presents safety risks to operations personnel processing the waste containers that has **NOT** been addressed,
THEN DOCUMENT the safety risks on Attachment 1.

[25] **CHECK** (√) ACCEPT or REJECT on the Attachment 1.

[26] **IF** REJECT was checked (√) in the previous step,
THEN DOCUMENT the reason for checking (√) REJECT in the TRU Operations Comments section of Attachment 1.

[27] **ENTER** name, signature, Z number and date on each Attachment 1.

[28] **FORWARD** a copy of Attachment 1 for each accepted waste container to the appropriate RP-1 personnel.

[29] **RETURN** each Attachment 1 to PC personnel.

PC Personnel

[30] **IF** a waste container was rejected by a TRU Operator,
THEN

[A] **IDENTIFY** (e.g., tag or mark) the rejected waste container indicating the container has been rejected for remediation.

[B] **SEGREGATE** the waste container in order to prevent the remediation of the waste container.

NOTE *NCR may be initiated at an operationally convenient time.*

[C] **INITIATE** an NCR in accordance with P330-6, Nonconformance Reporting, as required.

7. TRU WASTE REMEDIATION (continued)

NOTE *TRU debris waste that has been accepted for remediation is processed in accordance with the following steps.*

[31] **GENERATE** a TRU Transfer Request to have the waste containers transferred from storage to the applicable processing area.

NOTE *Parent waste containers are those original waste containers transferred from storage to the processing area, and the daughter waste containers are those waste containers resulting from the processing of the parent waste containers.*

[32] **TRACK** parent waste containers from storage through the transfer of the daughter and empty containers.

NOTE *Compliance with MAR limits are verified by Production Control using the barcode scanner during the mining (retrieval) of the identified waste containers.*

TRU Operator

[33] **MINE** (retrieve) and **STAGE** the parent waste containers at the location designated on the TRU Transfer Form.

[34] **VISUALLY INSPECT** the identified waste containers for labeling or markings that indicates that a waste container contains PCBs, asbestos, Americium, beryllium, or other items that would require special handling.

[35] **NOTIFY** PC personnel of the waste containers status and of any identified waste container markings or labels.

PC Personnel

[36] **DOCUMENT** the results of the visual inspection of the identified waste containers during the mining process in the Comments section of Attachment 1, as necessary.

[37] **UPDATE** mining and staging lists accordingly using the information from the TRU Operator.

[38] **IF** processing a waste container with a homogenous solid waste matrix (e.g., cemented or non-cemented solids),
THEN GO TO Step 7.[50].

7. TRU WASTE REMEDIATION (continued)

[39] **SCHEDULE** and **COORDINATE** the headspace gas analysis of the waste containers with the CCP LFL personnel.

NOTE *A waste container headspace gas sample resulting in a hydrogen concentration of greater than or equal to 3.2% or resulting in a organic compounds (VOC) concentration of greater than or equal to 7,000 ppm is considered an unvented waste container and is handled in accordance with EP-AREAG-WO-DOP-0201, TA-54 Area G Unvented TRU Waste Container Handling and Storage.*

CCP LFL Personnel

[40] **PERFORM** a headspace gas analysis of the parent waste containers.

[41] **MOVE** the completed parent waste containers to the LFL out-staging area.

[42] **NOTIFY** the PC and TRU Remediation Operators of the parent waste containers status.

TRU Operator

[43] **OVERPACK** containers in accordance with an approved procedure, as required.

[44] **TRANSFER** the parent waste containers from the LFL out-staging area to storage.

[45] **DETERMINE** whether the waste container Hydrogen and VOC values satisfy the following criteria:

- Less than 3.2% (32,000 ppm) for Hydrogen
- Less than 7,000 ppm VOC

[46] **IF** any waste container Hydrogen or VOC value does **NOT** satisfy the following:

- Less than 3.2% (32,000 ppm) for Hydrogen
- Less than 7,000 ppm VOC

THEN

[A] **FORWARD** LFL documentation to TRU Remediation Operators.

[B] **PERFORM** the required actions of EP-AERAG-WO-DOP-0201, TA-54 Area G Unvented TRU Waste Container Handling and Storage.

7. TRU WASTE REMEDIATION (continued)

[C] **NOTIFY** the TRU Waste Operations Manager, the TA-54 Operations Center, and Production Control of the discrepancy.

PC Personnel

[47] **IF** the parent waste containers are to be transferred to WCRRF,
THEN PROVIDE and **SCHEDULE** the parent waste containers to be transferred to WCRRF with the OS-PT personnel, as necessary.

[48] **FORWARD** each Attachment 1to TRU Remediation Operators.

[49] **IF** the parent waste containers are to be remediated in TA-54 Area G,
THEN

[A] **GENERATE** a transfer request for TRU Operator to transfer the containers from storage to the appropriate remediation location.

[B] **ENTER** the MAR inventory lots into the TRU Drum Transfer Form (Attachment 1) of EP-AREAG-WO-DOP-0219.

[50] **ENSURE** that the requested parent waste containers are transferred to the designated processing area.

TRU Remediation Operator

[51] **REMEDIATE** the parent waste containers in accordance with approved facility procedures.

[52] **WHEN** the parent waste containers have been remediated,
THEN NOTIFY PC personnel of the waste containers status.

PC Personnel

[53] **IF** the waste containers were remediated at WCRRF,
THEN

[A] **GENERATE** a list of daughter and empty waste containers to be transferred from WCRRF to TA-54 Area G.

7. TRU WASTE REMEDIATION (continued)

[B] **SCHEDULE** and **COORDINATE** the transfer of daughter and empty waste containers from WCRRF to TA-54 Area G with TRU Operator and OS-PT personnel.

[C] **PROVIDE** direction to the TRU Operator as to where daughter and empty waste containers are to be staged/stored.

[54] **IF** the waste containers were remediated in TA-54 Area G,
THEN GENERATE a transfer request for TRU Operator to transfer the daughter and empty waste containers to the storage or certification processes area, as applicable.

8. WIPP SHIPMENT PREPARATION

This section provides instructions describing the process of transferring waste containers to RANT for preparation and shipment to WIPP.

Transportation Certification Official (TCO)

[1] **IF** processing drums for shipment to WIPP,
THEN

[A] **REQUEST** waste containers to be mined and staged for inspection in accordance with CCP-TP-033, CCP Shipping of CH TRU Waste, using a list of waste containers approved for shipment to WIPP.

TRU Operator

[B] **MINE** (retrieve) and **STAGE** the requested waste containers in the ship-to-WIPP staging area.

TCO

[C] **ENSURE** that a waste container integrity inspection is performed on each requested waste container in accordance with EP-AREAG-WO-DOP-0209.

[D] **VERIFY** that a WIPP-approved vent filter (e.g., NucFil 013, NucFil 019, or NucFil 019DS) is installed.

[E] **VERIFY** that there are no open NCRs on any of the requested waste containers.

8. WIPP SHIPMENT PREPARATION (continued)

[2] **IF** processing Standard Waste Boxes (SWBs),
THEN

[A] **GENERATE** a Standard Waste Box (SWB) build list.

[B] **REQUEST** that the waste containers be mined and staged for inspection.

CCP/RANT Operations Personnel

[C] **ENSURE** that a waste container inspection is performed on each requested waste container in accordance with EP-AREAG-WO-DOP-0209.

[D] **LOAD** the desired SWB overpacks in accordance with approved procedures.

[3] **REQUEST** an RCT perform radiological surveys on the SWBs.

RCT

[4] **PERFORM** radiological surveys of the waste containers, as required.

NOTE *The Steps 8.[5] through 8.[8] may be performed in any sequence.*

RANT Operations Personnel

[5] **REQUEST** waste container labels from the WES-WA personnel.

WES-WA

[6] **GENERATE** container labels.

[7] **NOTIFY** the RANT Operations personnel when the waste container labels are available.

RANT Operations Personnel

[8] **RETRIEVE** the waste container labels.

TCO

[9] **REQUEST** that the waste containers and SWBs, as applicable, be transferred to RANT in accordance with the WIPP shipping schedule.

OS-PT

[10] **GENERATE** a TRU Transfer Request to transfer the waste containers from the ship-to-WIPP staging area to RANT.

8. WIPP SHIPMENT PREPARATION (continued)

RANT/TRU Operator

[11] **TRANSFER** the waste containers to RANT.

RANT Operations Personnel

[12] **RECEIVE** the waste container transfer in accordance with EP-RANT FOB-DOP-0203, Receipt of TRU Waste Containers at RANT.

[13] **INSPECT** the waste containers and SWBs in accordance with EP-RANT FOB-DOP-0203.

[14] **ENSURE** the waste containers and SWBs are properly labeled.

TCO/RANT Operations Personnel/CCP

[15] **ASSEMBLE** payloads, and **LOAD** the payloads into TRUPACT containers for shipment to WIPP.

[16] **COORDINATE** the shipments to WIPP.

9. EMPTY WASTE CONTAINER DISPOSITION

This section provides instructions for the disposition of empty waste containers.

PC Personnel

[1] **COORDINATE** the transfer and assay of empty waste containers with TRU Operator and LLWD personnel.

TRU Operator

[2] **TRANSFER** the empty waste containers from storage to Building TA-54-002 for assay.

LLWD Personnel

[3] **PERFORM** an assay on the empty waste containers.

[4] **PREPARE** an assay report for the empty waste containers.

[5] **PREPARE** a batch data report (BDR) for the empty waste containers.

[6] **COORDINATE** the transfer of the assayed empty waste containers with TRU Operator.

8. WIPP SHIPMENT PREPARATION (continued)

TRU Operator

[7] **TRANSFER** the assayed empty waste containers from Building TA-54-002 to storage.

NOTE *The coordination of the quality assurance (QA) review of BDRs and the associated data input may be performed concurrent with the transfer and disposal of the empty waste containers.*

LLWD Personnel

[8] **COORDINATE** a QA review of the BDR with PC personnel.

PC Personnel

[9] **PERFORM** a QA review of the BDR, and **PROVIDE** feedback to LLWD Personnel.

LLWD Personnel

[10] **UPLOAD** the assay data to the server/Waste Management Database Applications.

[11] **NOTIFY** PC personnel of the waste containers status.

NOTE *Transferring the waste containers from a TRU status to a LLW status in the Waste Management Database Application transfers the waste container's records to the Chem Low level Database and creates a crosswalk of the empty waste container numbers and the associated CWDR.*

PC Personnel

[12] **TRANSFER** those waste containers identified as LLW waste containers from TRU status to LLW status in the Waste Management Database Applications.

[13] **FORWARD** the crosswalk of the empty waste container numbers to the WES-WA personnel.

[14] **NOTIFY** LLWD Personnel that drums are ready for disposal.

LLWD Personnel

[15] **DISPOSE** of the LLW designated waste containers in accordance with approved procedures.

10. OTHER WASTE CONTAINER MOVEMENTS

From time-to-time there may be other waste container movements directed by PC personnel. These movements are to be processed using the TRU Drum Transfer Application system.

11. RECORDS

TRU Remediation Operator

[1] **DISPOSITION** records in accordance with the following:

Record Identification	Record Type Determination	Protection/Storage Method	Processing Instructions
Attachment 1, WDP Waste Remediation Safety Evaluation Data Sheet	Quality Assurance (QA) Record	Records **SHALL** have a reasonable level of protection to prevent loss and degradation. Records **SHALL** be maintained in a metal file cabinet when **NOT** in use.	When the records are ready for final disposition, the record is transferred to Records Management in accordance with EP-DIR-SOP-4004, Record Transmittal and Retrieval Process.

12. APPENDICES

Appendix 1, WDP Waste Container Remediation Determination Flowchart
Appendix 2, WDP Dose Rate Table

13. ATTACHMENT

Attachment 1, WDP Waste Remediation Safety Evaluation Data Sheet

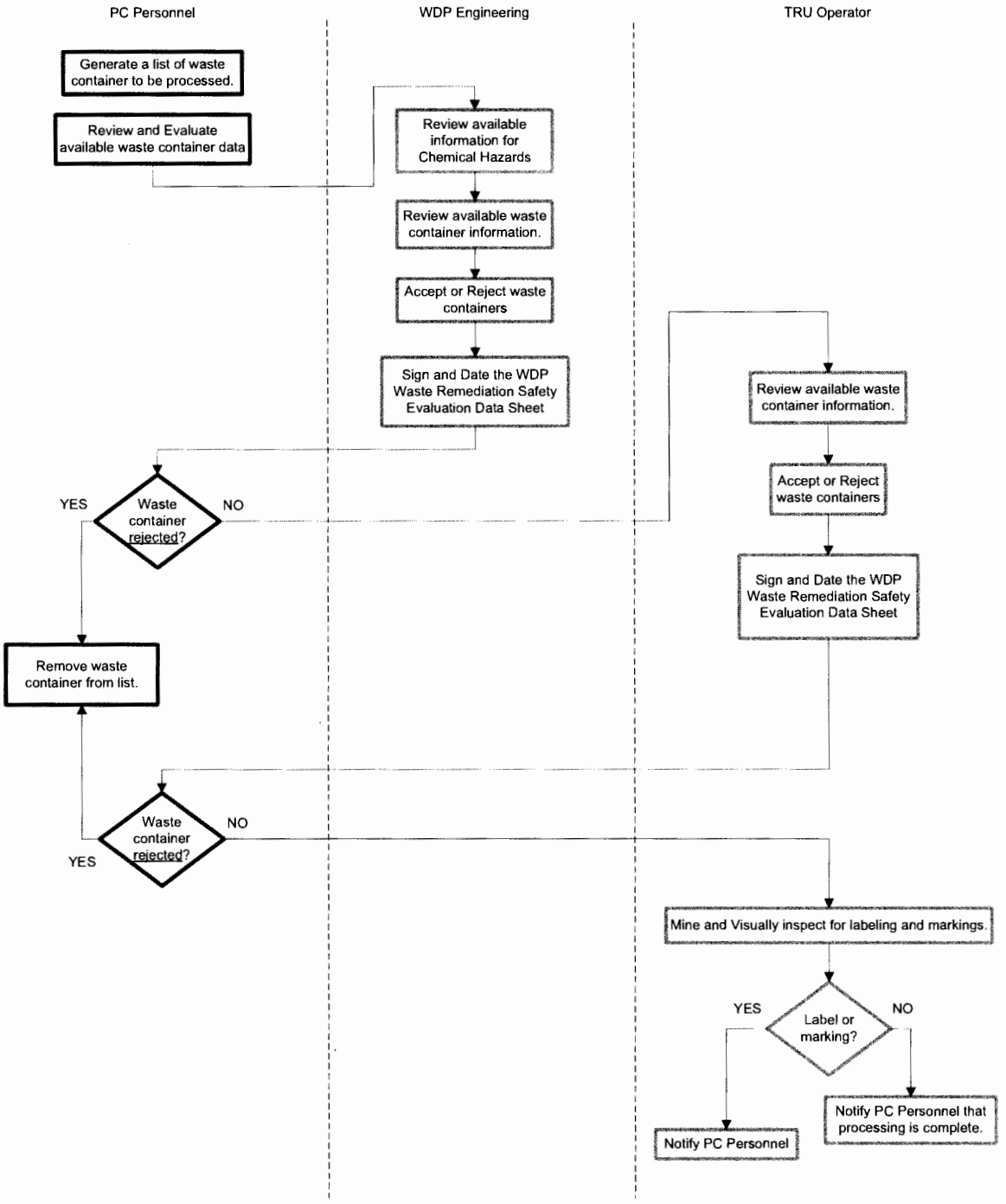
Using a CRYPTO Card, click here for "Required Read" credit.

If you do not possess a CRYPTOCard or encounter problems, contact the EP Central Training Office.

APPENDIX 1

Page 1 of 1

WDP Waste Container Remediation Determination Flowchart



APPENDIX 2
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WDP DOSE RATE TABLE

NOTE 1 *The values in the columns associated with each material type/isotope represent the material type/isotope gram limit before exceeding the RWP Dose Rate Limit in the column heading.*

NOTE 2 *RP-1 is to be contacted for those material types/isotopes not listed in this table.*

Material Type/Isotope	RWP Dose Rate Limit (mrem/h @ 30 cm)		
	100	1,000	10,000
Ac-227	Not dose limited		
Ac-228	Not dose limited		
Ag-108M	Not dose limited		
Al-26	1.00E-13	1.00E-12	1.00E-11
Am-242	1.11E-07	1.11E-06	1.11E-05
Am44 (Am-241)	1.3E-02	1.3E-01	1.3
Am45 (Am-243)	5.4E-01	5.4	5.4E+01
Ba-133	9.5E-05	9.5E-04	9.5E-03
Bi-207	1.75E-03	1.75E-02	1.75E-01
Bi-212	4.44E-09	4.44E-08	4.44E-07
Bk-249	Not dose limited		
Cd-109	1.35E-05	1.35E-04	1.35E-03
Ce-144	7.85E-05	7.85E-04	7.85E-03
Cf-248	2.85E-04	2.85E-03	2.85E-02
Cf-249	Not dose limited		
Cf-250	4.21E-03	4.21E-02	4.21E-01
Cf-252	9.32E-04	9.32E-03	9.32E-02
Cf48 (Cf-252)	9.32E-04	9.32E-03	9.32E-02
Cl-36	Not dose limited		
Cm-242	8.76E-05	8.76E-04	8.76E-03
Cm-243	Not dose limited		
Cm-244	Not dose limited		
Cm-245	Not dose limited		

APPENDIX 2
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Material Type/Isotope	RWP Dose Rate Limit (mrem/h @ 30 cm)		
	100	1,000	10,000
Cm-247	Not dose limited		
Cm46	Not dose limited		
Co-57	1.78E-06	1.78E-05	1.78E-04
Co-60	6.1E-06	6.1E-05	6.1E-04
Cs-137	3.1E-04	3.1E-03	3.1E-02
Eu-152	7.6E-05	7.6E-04	7.6E-03
Eu-154	4.7E-05	4.7E-04	4.7E-03
Eu-155	1.96E-04	1.96E-03	1.96E-02
Fe-55	1.47E-05	1.47E-04	1.47E-03
H-3	Not dose limited		
Hg-203	3.77E-06	3.77E-05	3.77E-04
I-125	Not dose limited		
I-129	4.02E+02	4.018E+3	4.0181E+4
Ir-192	2.0E-06	2.0E-05	2.0E-04
Kr-85	1.78E-02	1.78E-01	1.78E+00
MFP (Sr-90 basis)	Not dose limited		
Mn-54	1.7E-06	1.7E-05	1.7E-04
Mn-56	Not dose limited		
Na-22	1.2E-06	1.2E-05	1.2E-04
Na-24	7.08E-15	7.08E-14	7.08E-13
Nb-94	3.13E-11	3.13E-10	3.13E-09
Np-237	5.7E+01	5.7E+02	5.698E+03
Np-239	1.51E-07	1.51E-06	1.51E-05
Np82 (Np-237)	5.7E+01	5.7E+02	5.698E+03
Pa-231	6.77E-01	6.77E+00	6.77E+01
Pa-234	3.12E-09	3.12E-08	3.12E-07
Pb-210	Not dose limited		
Pb-212	Not dose limited		
Pm-146	4.06E-05	4.06E-04	4.06E-03

APPENDIX 2
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Material Type/Isotope	Dose Limit (mrem/h @ 30 cm)		
	100	1,000	10,000
Pu-236	3.76E-04	3.76E-03	3.76E-02
Pu-238	Not dose limited		
Pu-239	Not dose limited		
Pu-240	Not dose limited		
Pu-241	1.6E-02	1.6E-01	1.6
Pu-242	Not dose limited		
Pu-244	Not dose limited		
Pu42	5.1E-01	5.1	5.1E+01
Pu51	2.1E+01	2.1E+02	2.096E+03
Pu52	8.0	8.0E+01	7.97E+02
Pu53	4.4	4.4E+01	4.35E+02
Pu54	2.0	2.0E+01	1.97E+02
Pu55	2.53E-02	2.53E-01	2.53E+00
Pu56	1.4	1.4E+01	1.35E+02
Pu57	8.22E-03	8.22E-02	8.22E-01
Pu83	5.0	5.0E+01	4.98E+02
Ra-224	7.53E-06	7.53E-05	7.53E-04
Ra-226	1.4	1.4E+01	1.4E+02
Ru-106	2.27E-05	2.27E-04	2.27E-03
Sb-125	2.86E-05	2.86E-04	2.86E-03
Sc-46	6.37E-13	6.37E-12	6.37E-11
Sm-151	3.23E-01	3.23E+00	3.23E+01
Sn-121m	5.56E-03	5.56E-02	5.56E-01
Sn-126	3.00E+00	3.00E+01	3.00E+02
Sr-90	Not dose limited		
Th-228	Not dose limited		
Th-229	Not dose limited		
Th-232	Not dose limited		

APPENDIX 2
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Material Type/Isotope	Dose Limit (mrem/h @ 30 cm)		
	100	1,000	10,000
Th-234	Not dose limited		
Th88 (Th-232)	Not dose limited		
Ti-44	Not dose limited		
Tl-208	Not dose limited		
Tm-171	2.30E-03	2.30E-02	2.30E-01
U-232	Not dose limited		
U-233	Not dose limited		
U-234	Not dose limited		
U-235	Not dose limited		
U-236	Not dose limited		
U-238	Not dose limited		
U12	Not dose limited		
U15	Not dose limited		
U22	Not dose limited		
U23	Not dose limited		
U31	Not dose limited		
U32	Not dose limited		
U33	Not dose limited		
U34	Not dose limited		
U35	Not dose limited		
U36	Not dose limited		
U37	Not dose limited		
U38	Not dose limited		
U39	Not dose limited		
U70	Not dose limited		
U81	Not dose limited		
Y-90	Not dose limited		
Zr-95	Not dose limited		

ATTACHMENT 1

Page 1 of 1

WDP Waste Remediation Safety Evaluation Data Sheet

Production Control

Container ID: _____ Container Type: _____ Gross Weight (lbs): _____

Inner Seal #: _____ Filter Prefix: _____ Filter Serial #: _____

AK Waste Stream: _____ Certified RTR BDR: _____

TWSR Comments: _____

Total PE-Ci Activity: _____ Equivalent Combustible PE-Ci: _____ AM-241 PE-Ci: _____

Total Fissile Gram Equivalents: _____ Total Surface Dose Rate (mrem/hr): _____

EPA Code(s): _____

NCR RTR/NDA Com. _____

RTR Pre-Screen Dat : _____ Cc mer _____

Certified RTR Comment: _____

Prohibited items: ☐ Sealed > 4 liters ☐ Liquid ☐ Pressurized Container ☐ Impenetrable Item ☐ Other

Remediation Determination: ☐ Green ☐ Yellow ☐ VE ☐ PID ☐ Split ☐ Repack

Estimated 30-cm Dose Rate (mrem/hr): ☐ < 100 ☐ > 100 and < 1,000 ☐ > 1,000 and < 10,000 ☐ >10,000

TRUCON Code: _____ Production Control Comments: _____

Performed By: _____ / _____ / _____ / _____
Production Control (Print) Signature Z# Date

WDP Engineering

Chemicals present (e.g., Pyrophoric, acids, bases, shock sensitive, organic liquids, peroxides, crown ethers): ☐ Yes ☐ No ☐ Unknown

Processing Determination: ☐ Accept ☐ Reject

WDP Engineering Comments: _____

Performed By: _____ / _____ / _____ / _____
WDP Engineering (Print) Signature Z# Date

TRU Remediation Operations

☐ Waste Container Information Evaluated ☐ Less than 170 lbs ☐ RTR Video Available

Other Specific Safety Concerns: _____

Processing Determination: ☐ Accept ☐ Reject

TRU Operations Comments: _____

Performed By: _____ / _____ / _____ / _____
TRU Operations (Print) Signature Z# Date

Section 16.1 Attachment 3 - Procedure Change Request

Procedure Change Request

Section #1 – Type of Request

Manual/Procedure No. (if known): EP-DIV-AP-0107	Revision: 1
Title: WDP TRU Waste Container Management Operations	

Detailed description of requested change (Attach additional sheets if needed. Number additional sheets):

Update title for TRU Operators; differentiate TRU Remediation Operators; replace references to "Appendix 3" with "Attachment 1;" add isotopes to Appendix 2; make minor revisions to Attachment 1 and label as a sample data sheet. Make editorial changes.

Requestor Signature:	Print Name:	Phone:	Date:
	Ken Chartrand	412-8050	2-23-2010

Section #2 – Procedure Owner Approval for Processing

☐ New Procedure ☐ Major Revision ☒ Minor Revision ☐ Special Procedure
☐ IPC ☐ Deactivation ☐ Cancellation ☐ IPC Rollup

☑ Approved ☐ Disapproved (Return to originator) Priority: High

Procedure Owner's Supervisor Signature:	Print Name:	Date:
M.D. Shepard	Mark D. Shepard	2/23/2010

Section #3 – Review and Concurrence

IPC #: N/A IPCs Incorporated: N/A Affected Pages: N/A

Other affected facilities or N/A: N/A Obtain Concurrence all facilities/organizations affected by this change

Review and Concurrence: Review organizations (N/A if not required); document additional review organizations, if needed, on continuation sheet. CSE approval required for all technical procedures except minor revisions, IPC Rollup, and non-AB related cancellations/deactivations. CSE approval always required for changes affecting safety basis steps.

Department	Print Name	Signature:	Date:
Robert Jones	Production Control	email concurrence	2-25-10
Dennis Ciocchetti	WCRRF	email concurrence	3-8-10
Anne Hallman	RP-1 for Anne Hallman		3-23-10
Robert Griffis	Engineering	email concurrence	3-1-10

CSE USQ Number (As applicable): WDP 10-190-D

ADC: ☑ Unclassified ☐ OUO ☐ UCNI ☐ Classified 3.25.10
Print Name: EP-TWGO Signature:

Section #4 – Training Review #200975

Validation Required: ☐ Yes ☒ No	Document is Authorized to serve as Part I of the IWD ☒ Yes ☐ No	Periodic Review Requirements Satisfied? ☒ Yes ☐ No

Training Required ☐ Yes ☒ No ☐ Classroom/Briefing ☐ On the Job ☐ Just-in Time ☒ Required Reading ☐ Hold for Completion of Training ☐ Release Procedure to field

Approval Signature:	Print Name:	Z Number	Date:	Phone:
M.D. Shepard	Mark D. Shepard	168688	3/29/2010	665-6878

Information Request No. 10

Attachment 10.2

1. *EP-AREAG-WO-DOP-0209, R.10 - WDP TA-54 Area G TRU Waste Receipt, Storage, and Transfers*
2. *EP-DIV-AP-0107 R.1 -WDP TRU Waste Container Management Operations*

(These documents were provided under attachment 10.1)

Information Request No. 10

Attachment 10.3

*1. *EP-AREAG-WO-DOP-0209, R.10 - WDP TA-54 Area G TRU Waste Receipt, Storage, and Transfers*
*2. *EP-DIV-AP-0107 R.1 - WDP TRU Waste Container Management Operations*
3. *EP-DIV-DOP-0103, R.0 - WDP TRU Waste Container Labeling*

*(These documents were provided under attachment 10.1)

EP-DIV-DOP-0103, R.0

WDP TRU Waste Container Labeling

Effective Date: 2/22/2010

Next Review Date: 2/22/2012

Procedure Owner:	Signature:	Date:
Michael Romero		2/17/10

This document fully satisfies the requirements of P300, Integrated Work Management, in order to systematically describe the work activity, the associated hazards, and the controls that **MUST** be employed to mitigate the risks.

REVISION HISTORY

Document Number	Issue Date	Action	Description
EP-DIV-DOP-05, R.0	Training Only	New Document	New procedure for labeling of TRU waste containers. This procedure incorporates the requirements of, and supersedes, standing order TRU-SO-0103, Labeling of TRU Waste Containers at WCRRF, RANT, and TA-54, Area G. This activity has been determined to be a "low hazard" as defined by P300; therefore, no hazard analysis is required.
EP-DIV-DOP-0103, R.0	February 22, 2010	Major Revision	Renumbered procedure per current numbering system. Revised procedure to incorporate process improvements. Incorporated actual instructions for re-labeling waste containers that are not properly labeled. Made editorial corrections as necessary. Changed the applicability (scope) of the procedure to omit RANT Facility. No change in hazard analysis.

TABLE OF CONTENTS

1. PURPOSE

This procedure provides the instructions and requirements for labeling and re-labeling Transuranic (TRU) Waste Containers for the Waste Disposition Project (WDP) organizations at the Los Alamos National Laboratory (LANL) as outlined below.

2. SCOPE

The provisions of this procedure apply to the following facilities under direct management of the Waste Disposition Project organization at LANL: Waste Characterization, Reduction and Repackaging Facility (WCRRF), Technical Area (TA)-54 Area G.

This procedure does not apply to the Radioassay and Non-Destructive Testing (RANT) Facility, or to RANT Facility personnel preparing waste containers in TA-54 Area G. The drums stored and handled in RANT, and packaged and labeled at TA-54 Area G to support Waste Isolation Pilot Plant (WIPP) shipments, fall under the labeling requirements of WIPP.

This revision is a total re-write, therefore, no revision bars are included.

3. REFERENCES

ABD-WFM-002, Technical Safety Requirements (TSRs) for Technical Area 54, Area G

EP-DIV-AP-10, EWMO Pre-Job Briefing

EP-DIR-SOP-4004, Record Transmittal and Retrieval Process

P101-18, Procedure for Pause/Stop Work

P121, Radiation Protection

P300, Integrated Work Management

P330-6, Nonconformance Reporting

P930-1, LANL Waste Acceptance Criteria

4. PRECAUTIONS AND LIMITATIONS

- The activities performed in accordance with this procedure are determined to be "low hazard" as defined by P300, Integrated Work Management: therefore, no hazard analysis is required to perform this procedure.

- Activities, items, and containers **SHALL** satisfy approved design specifications, regulatory requirements, process-specific parameters, and procedural requirements. Activities, items, or containers that do not conform to the approved specifications and requirements are considered nonconforming and Nonconformance Reports (NCRs) **SHALL** be generated in accordance with P330-6, Nonconformance Reporting, as required.

- When a worker observes an unsafe condition or act that may pose an imminent danger or other safety concern/hazard, the worker has the authority and responsibility to inform the worker engaged in the work and request that the work activity be paused and/or stopped based on the risk posed to the individual, the employees, the environment, or the facility in accordance with P101-18, Procedure for Pause/Stop Work.

- To comply with the intent of the ALARA Program, all personnel **SHALL** apply the principles of time, distance, and shielding when working with radiological materials.

- Personal Protective Equipment (PPE) **SHALL** be worn as required by the specific area (e.g., TA-54 Area G or WCRRF) where labeling is to be performed.

- Outdoor waste container labeling operations **SHALL** be suspended during inclement weather or as directed by the applicable Operations Center, and personnel **SHALL** seek shelter in a grounded building or vehicle.

- Application of the labels **SHALL** be independently verified for accuracy by the position designated herein.

- All re-labeling evolutions **SHALL** be documented by completing Attachment 1, TRU Waste Container Re-Labeling and Verification Data Sheet.

4. PRECAUTIONS AND LIMITATIONS (continued)

- Only personnel qualified to the positions listed in the table below may apply TRU Waste Container identification labels for the following purposes:
  - — Application of TRU Waste Container labels as one-for-one replacements of damaged labels
  - — Transfer of labels from TRU Waste Containers being overpacked to the Overpack (single or multiple containers into one Overpack)
  - — Application of new identical labels on the Overpack

NOTE *Where multiple containers are placed into a single overpack (i.e., four 55-gallon drums being placed into an SWB), the TRU Waste Database O/P Module will be completed prior to printing the All-in-One label, or container ID barcode labels. The overpack will be issued a unique identification number that will reference the container identification numbers of the containers placed in the overpack.*

Facility	Position
WCRRF	WCRRF Shift Operations Supervisor or designee, or WCRRF Technician authorized by the WCRRF Shift Operations Supervisor/designee
TA-54 Area G	TRU Shift Operations Supervisor or designee, or TRU Technician authorized by the TRU Shift Operations Supervisor/designee
TA-54 Area G, Dome 231 Permacon	Contractor Field Team Lead or designee, or Contractor Operations Technician authorized by the Contractor Field Team Lead/designee

- A TRU Shift Operations Supervisor or designee and Contractor Field Team Lead or designee authorized above **SHALL** independently verify that the correct labels have been applied to the TRU waste container in accordance with Attachment 1, TRU Waste Container Re-Labeling and Verification Data Sheet.

- This procedure contains special procedure step markings. **($)** is used to identify steps that implement Safety Basis requirements. Steps containing **($)** may not be changed without Engineering approval in order to ensure that the safety envelope is maintained.

- **($)** Newly generated Waste Containers received at the Area G site **SHALL** comply with LANL Waste Acceptance Criteria (WAC) or an approved exemption. (ABD-WFM-002, AC 5.6.8)

5. PREREQUISITE ACTIONS

5.1 Planning and Coordination

Supervisor

[1] **ENSURE** that a pre-job briefing is conducted for all personnel involved in the performance of this procedure, in accordance with EP-DIV-AP-10, EWMO Pre-Job Briefing.

[2] **ENSURE** that the current revision of this document is available.

[3] **ENSURE** that the performance of this procedure is scheduled on the applicable facility Plan of the Day (POD).

[4] **ENSURE** that a Radiological Work Permit (RWP) is obtained in accordance with P121, Radiation Protection, as applicable.

[5] **ENSURE** that, as a minimum, the following personnel trained to the use of this procedure are available for the performance of this procedure:
- Two Operators/Technicians
- One Supervisor

5.2 Materials and Equipment

5.2.1 Special Tools and Equipment

NOTE *The list of special tools and equipment is not an all inclusive list and additional tools and equipment may be used as necessary.*

Operator or Supervision

[1] **ENSURE** that the following special tools and equipment are available, as required:
- "DOT 7A TYPE A" stencil for SWB
- Indelible ink pen
- PPE as required by the area where the labeling is to be performed

5.2.2 Consumables

NOTE *The list of consumables is <u>not</u> an all inclusive list and additional consumables may be used as necessary.*

Operator or Supervision

[1] **ENSURE** that the following consumables are available, as required:

- All-in-One Hazardous Waste label
- All-in-One Non-Hazardous Waste label
- Radioactive Waste label (yellow Health Physics)
- Container Identification (ID) Barcode label
- Non-Defense Program (Non-DP) Funded Activities label

6. PERFORMANCE—NEW TRU WASTE DRUM LABELING

This section is a stand-alone section and may be performed independently of, or in conjunction with, other Performance sections.

NOTE 1 *The All-in-One Label is pre-printed and incorporates the Hazardous/Non-Hazardous Label and the drum bar code label numbers in one label, and may be applied to the container in lieu of individual labels at the discretion of supervision. See Appendix 1, TRU Waste Drum and SWB Labeling Examples, for labeling examples.*

NOTE 2 *The All-in-One Label may be trimmed to remove all material to the right of the Hazardous/Non-Hazardous Label prior to being applied to the container, at the discretion of Supervision.*

Operator / Technician

[1] **APPLY** labels to the TRU Waste Drum in accordance with the illustration on Appendix 1 and the following;

- Five (5) container ID barcode labels as follows:
  - — Three (3) container ID barcode labels approximately 6 in. from the bottom of the drum, one immediately adjacent to the drum seam and the other two approximately 120° apart.
  - — One (1) container ID barcode label in the center of the drum lid.
  - — One (1) container ID barcode label immediately adjacent to the drum seam between the top two rolling hoops.
- Two (2) Health Physics yellow radioactive waste labels as follows:
  - — One (1) yellow radioactive waste label on the center of the drum lid.
  - — One (1) yellow radioactive-waste labels between the bottom two rolling hoops.
- One (1) blue, non-regulated waste marking **OR** one (1) yellow hazardous waste marking placed immediately adjacent to the drum seam between the top two rolling hoops.
- One (1) Non-Defense Program (Non-DP) funded activities marking placed immediately adjacent to the drum seam approximately 6 in. from the bottom of the drum, if the waste was generated as a result of Non-DP funded activities, as applicable.

6. PERFORMANCE—NEW TRU WASTE DRUM LABELING (continued)

[2] **RECORD** the gross weight of the container on the drum lid, in whole pounds, written in a minimum of one-half inch-high letters in indelible ink.

[3] **IF** generating a hazardous waste marking,
THEN ENSURE that the hazardous waste marking contains the following:

- Waste Generators name and address
- Hazardous waste manifest number
- Department of Transportation (DOT) proper shipping name and identification number
- Accumulation start date

[4] **IF** any of the information listed in the previous step is **NOT** satisfactory,
THEN STOP the work activity and **NOTIFY** supervision for the applicable actions.

[5] **IF** the drum is located in TA-54, Area G,
THEN SCAN the barcode and **ASSIGN** the drum to the correct location in the TRU Waste Database.

7. PERFORMANCE—NEW TRU STANDARD WASTE BOX (SWB) LABELING

This section is a stand-alone section and may be performed independently of, or in conjunction with, other Performance sections.

NOTE 1 *The All-in-One Label is pre-printed and incorporates the Hazardous/Non-Hazardous Label and the drum bar code label numbers in one label, and may be applied to the container in lieu of individual labels at the discretion of supervision. See Appendix 1, TRU Waste Drum and SWB Labeling Examples, for labeling examples.*

NOTE 2 *The All-in-One Label may be trimmed to remove all material to the right of the Hazardous/Non-Hazardous Label prior to being applied to the container, at the discretion of Supervision.*

Operator / Technician

[1] **APPLY** labels to the SWB in accordance with the illustration on Appendix 1 and the following;

- Container ID barcode labels as follows:
  - — One (1) container ID barcode label placed near the center on each curved side between the raised bars of the SWB.
  - — One (1) container ID barcode label placed near the center of the top of the SWB above the top raised bar.
- One (1) radioactive waste marking placed near the center on each curved side between the raised bars of the SWB.
- One (1) Non-DP marking placed near the center on each curved side between the raised bars of the SWB.
- One (1) Non-Regulated Waste marking **OR** one (1) Hazardous Waste label near the center of one of the curved sides.

[2] **STENCIL** or otherwise **LABEL** the words "DOT 7A TYPE A" in 1-inch lettering in an unobstructed area of the SWB.

[3] **RECORD** the gross weight of the SWB on the flat sides of the SWB below the barcode label, in whole pounds, written in a minimum of one-half inch-high letters in indelible ink.

7. PERFORMANCE—NEW TRU STANDARD WASTE BOX (SWB) LABELING (continued)

[4] **IF** any of the information listed in the previous step is **NOT** satisfactory,
THEN STOP the work activity and **NOTIFY** supervision for the applicable actions.

[5] **IF** the SWB is located in TA-54, Area G,
THEN SCAN the barcode and **ASSIGN** the SWB to the correct location in the TRU Waste Database.

8. PERFORMANCE—RE-LABELING TRU WASTE CONTAINERS

This section is a stand-alone section and may be performed independently of, or in conjunction with, other Performance sections.

The actions in this section are applicable only to re-labeling operations in which a label containing a waste container identification number is placed on a TRU waste container.

The decision to apply a new label on TRU Waste Containers which have been determined to be mislabeled **SHALL** be approved in writing by the TRU Operations Manager or designee. In all cases the decision to apply a new label **SHALL** be concurred with, in writing, by the WDP Production Control Manager or designee.

NOTE *The following steps are to be performed by qualified personnel identified in Section 4, Precautions and Limitations.*

Operator / Technician

[1] **RECORD** the TRU Waste Container number to be labeled on Attachment 1, TRU Waste Container Re-Labeling and Verification Data Sheet.

NOTE *The waste generator data can be obtained from the TRU waste database administrator or designee.*

[2] **OBTAIN** a copy of the waste generator data from the TRU Waste database for the TRU waste container to be relabeled and **ATTACH** the waste generator data to a copy of Attachment 1, TRU Waste Container Labeling and Verification Data Sheet, and **DOCUMENT** on Attachment 1.

NOTE *Use of an email message will suffice as written communication for these decisions and concurrences, and all of this documentation (email included)* ***SHALL*** *be maintained as QA records.*

[3] **IF** the TRU Waste Container is found to be mislabeled,
THEN OBTAIN written permission and the following information from the TRU Operations Manager or designee to re-label the identified waste containers, and **DOCUMENT** on Attachment 1:

- Container identifications
- Justification for the re-labeling
- Qualified individuals authorized to apply the new labels
- Qualified individuals authorized to independently verify the new labels

8. PERFORMANCE—RE-LABELING TRU WASTE CONTAINERS (continued)

[4] **REVIEW** the following information and **DETERMINE** whether the information is satisfactory, and **CHECK** (√) SAT or UNSAT on Attachment 1:

- TRU Waste Container number matches the Package or TRU Waste Storage Record (TWSR) Number listed in the TRU Waste Database.
- Container type and volume matches the container type and volume listed in the TRU Waste Database (i.e., 55-gallon drum/0.208 m^3).
- Container weight matches the container weight listed in TRU Waste Database.
- Container waste stream ID and description matches the container waste stream ID and description listed in the TRU Waste Database.
- Container filter ID matches the container filter ID listed in the TRU Waste Database.
- Any additional information not listed above matches the container (i.e., retrievable tab number, tamper seal number, hand written markings, etc.).

NOTE *Information is entered and discrepancies are resolved in the Waste Management Database Application in accordance with SOP-5187, Data Management of Transuranic Waste Storage Record.*

[5] **IF** any of the information listed in the previous step is **NOT** satisfactory, **THEN STOP** the work activity and **NOTIFY** supervision for the applicable actions.

NOTE 1 *The All-in-One Label is pre-printed and incorporates the Hazardous/Non-Hazardous Label and the drum bar code label numbers in one label, and may be applied to the container in lieu of individual labels at the discretion of supervision. See Appendix 1, TRU Waste Drum and SWB Labeling Examples, for labeling examples.*

NOTE 2 *The All-in-One Label may be trimmed to remove all material to the right of the Hazardous/Non-Hazardous Label prior to being applied to the container, at the discretion of Supervision.*

[6] **PERFORM** one of the following to apply the applicable labels to a TRU Waste Drum or TRU SWB, and **CHECK** (√) YES or NO on Attachment 1: (P930-1, LANL Waste Acceptance Criteria):

8. PERFORMANCE—RE-LABELING TRU WASTE CONTAINERS (continued)

[A] **APPLY** labels/markings to the TRU Waste Drum in accordance with the illustration on
Appendix 1 and the following:

- Five (5) container ID barcode labels as follows:
  - Three (3) container ID barcode labels approximately 6" from the bottom of the drum, one immediately adjacent to the drum seam and the other two approximately 120° apart.
  - One (1) container ID barcode label in the center of the drum lid.
  - One (1) container ID barcode label immediately adjacent to the drum seam between the top two rolling hoops.
- Three (3) Health Physics yellow radioactive waste labels as follows:
  - One (1) yellow radioactive waste label on the center of the drum lid.
  - Two (2) yellow radioactive-waste labels between the bottom two rolling hoops approximately 180° apart.
- One (1) blue, non-regulated waste marking **OR** one (1) yellow hazardous waste marking placed immediately adjacent to the drum seam between the top two rolling hoops.
- One (1) radioactive waste marking placed immediately adjacent to the drum seam between the top two rolling hoops.
- One (1) Non-Defense Program (Non-DP) funded activities marking placed immediately adjacent to the drum seam approximately 6" from the bottom of the drum, if the waste was generated as a result of Non-DP funded activities, as applicable.
- **RECORD** the gross weight of the container on the drum lid, in whole pounds, written in a minimum of one-half inch-high letters in indelible ink.
- **ENSURE** that the hazardous waste marking contains the following, as applicable:
  - Waste Generators name and address
  - Hazardous waste manifest number
  - Department of Transportation (DOT) proper shipping name and identification number
  - Accumulation start date

8. PERFORMANCE—RE-LABELING TRU WASTE CONTAINERS (continued)

[B] **APPLY** labels/markings to the SWB in accordance with the illustration on Appendix 1 and the following:

- Container ID barcode labels as follows:
  - — One (1) container ID barcode label placed near the center on each curved side between the raised bars of the SWB.
  - — One (1) container ID barcode label placed near the center of the top of the SWB above the top raised bar.
- One (1) radioactive waste marking placed near the center on each curved side between the raised bars of the SWB.
- One (1) Non-DP marking placed near the center on each curved side between the raised bars of the SWB.
- One (1) Non-Regulated Waste marking **OR** one (1) Hazardous Waste label near the center of one of the curved sides.
- **STENCIL** or otherwise **LABEL** the words "DOT 7A TYPE A" in 1-inch lettering in an unobstructed area of the SWB.
- **RECORD** the gross weight of the SWB on the flat sides of the SWB below the barcode label, in whole pounds, written in a minimum of one-half inch-high letters in indelible ink.

[7] **SIGN** and **DATE** Attachment 1.

Independent Verifier

[8] **REVIEW** the following information and **DETERMINE** whether the information is satisfactory, and **CHECK** (√) SAT or UNSAT on Attachment 1:

- LANL WAC required labels appropriately applied (see Step 8[6])
- TRU Waste Container number matches the Package or TWSR Number listed in the TRU Waste Database.
- Container type and volume matches the container type and volume listed in the TRU Waste Database (i.e., 55-gallon drum/0.208 m^3).
- Container weight matches the container weight listed in TRU Waste Database.
- Container waste stream ID and description matches the container waste stream ID and description listed in the TRU Waste Database.
- Container filter ID matches the container filter ID listed in the TRU Waste Database.
- Any additional information not listed above matches the container (i.e., retrievable tab number, tamper seal number, hand written markings, etc.).

8. PERFORMANCE—RE-LABELING TRU WASTE CONTAINERS (continued)

[9] **IF** any of the information listed in the previous step is **NOT** satisfactory,
THEN STOP the work activity and **NOTIFY** supervision for the applicable actions.

[10] **SIGN** and **DATE** Attachment 1.

Operator / Technician

[11] **IF** the container is located in TA-54, Area G,
THEN SCAN the barcode and **ASSIGN** the container to the correct location in the TRU Waste Database.

9. POST-PERFORMANCE ACTIVITY

9.1 Disposition

NOTE *Completing a Post-Job Review may be accomplished using the applicable P300 form or online (the preferred method since the institution has access to feedback and lessons learned http://int.lanl.gov/safety/iwmc/ [Click on the Submit IWD Part 4 Post-Job Review]).*

Shift Operations Supervisor (SOS) or Designee

[1] **IF** any of the following occur:

- An activity was completed for the first time
- A request was made by anyone involved with the performance of this procedure to perform a post-job review
- An abnormal event occurred
- A revision to an existing procedure was issued and it has been determined by the procedure owner or designee that a Post-Job Review is required

THEN PERFORM a formal Post Job Review (PJR) in accordance with P300.

[2] **IF** the Post-Job Review identified any necessary changes to this procedure, **THEN INITIATE** a revision to this procedure.

9.2 Records Processing

Supervisor

[1] Ensure that documents generated by the performance of this procedure are processed as follows:

Record Identification	Record Type Determination	Protection/Storage Methods	Processing Instructions
Written communication and concurrences (emails included) associated with the approval of labeling Attachment 1, TRU Waste Container Re-Labeling and Verification Data Sheet	QA Record	Supervision **SHALL** implement a reasonable level of protection to prevent loss and degradation.	When the records are ready for final disposition, the record is transferred to Records Management in accordance with EP-DIR-SOP-4004, Record Transmittal and Retrieval Process.

10. APPENDICES

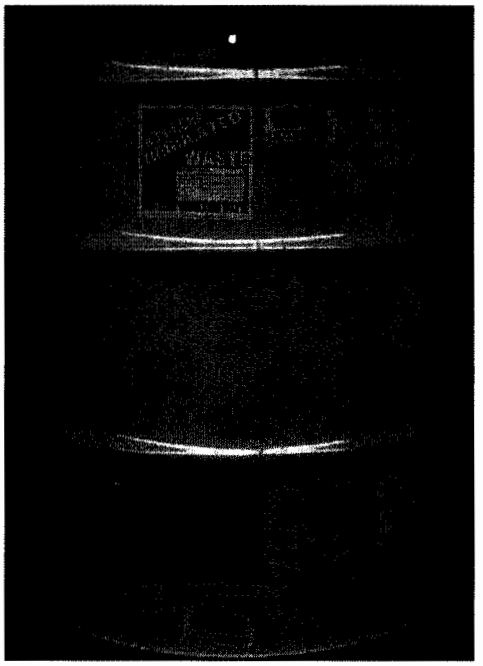
Appendix 1, Examples of TRU Waste Drum and SWB Labeling

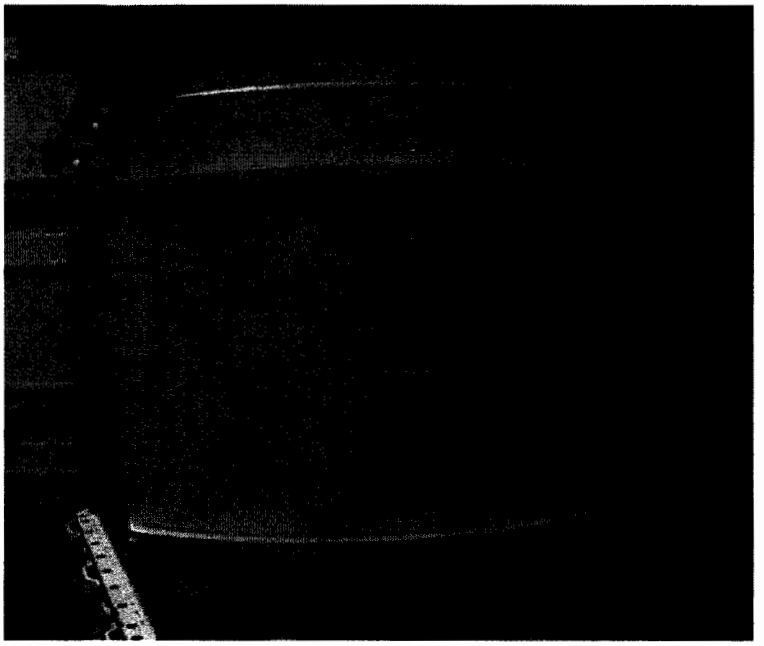
11. ATTACHMENTS

Attachment 1, TRU Waste Container Re-Labeling and Verification Data Sheet

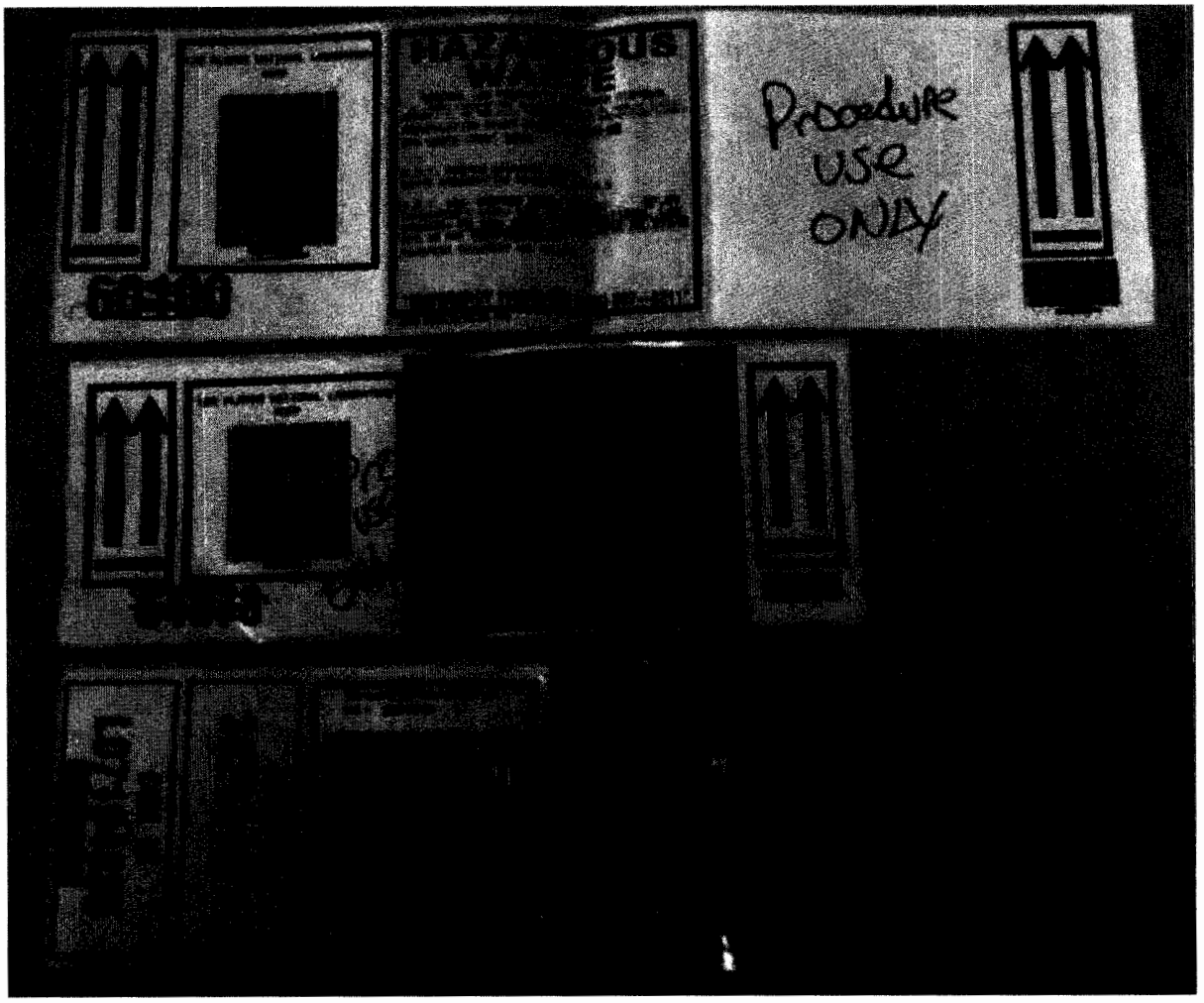
APPENDIX 1
Page 1 of 2

TRU Waste Drum and SWB Labeling Examples





APPENDIX 1
Page 2 of 2



ATTACHMENT 1
Page 1 of 1

TRU Waste Container Re-Labeling and Verification Data Sheet

8[1] TRU Waste Container Number: _____

Step Number	Verification Step		Performer	Verifier
8[2]	**OBTAIN** waste generator data from the TRU Waste database for the TRU waste container to be relabeled and attach generator data to Attachment 1. (N/A for new waste containers.)	☐ SAT ☐ N/A	Init _____ Date_____	Init _____ Date_____
8[3]	**IF** container is to be re-labeled, **OBTAIN** written permission to re-label the applicable containers. (N/A for new waste containers.)	☐ SAT ☐ N/A	Init _____ Date_____	Init _____ Date_____
8[4] / 8[8]	TRU Waste Container number matches the Package or TWSR Number listed in the TRU Waste Database.	☐ SAT ☐ UNSAT	Init _____ Date_____	Init _____ Date_____
8[4] / 8[8]	Container type and volume matches the container type and volume listed in the TRU Waste Database (e.g., 55-gallon drum/0.208 m^3).	☐ SAT ☐ UNSAT	Init _____ Date_____	Init _____ Date_____
8[4] / 8[8]	Container weight matches the container weight listed in TRU Waste Database.	☐ SAT ☐ UNSAT	Init _____ Date_____	Init _____ Date_____
8[4] / 8[8]	Container waste stream ID and description matches the container waste stream ID and description listed in the TRU Waste Database.	☐ SAT ☐ UNSAT	Init _____ Date_____	Init _____ Date_____
8[4] / 8[8]	Container filter ID matches the container filter ID listed in the TRU Waste Database.	☐ SAT ☐ UNSAT	Init _____ Date_____	Init _____ Date_____
8[4] / 8[8]	Additional information <u>not</u> listed above matches the container (i.e., retrievable tab number, tamper seal number, hand written markings, etc.)	☐ SAT ☐ UNSAT	Init _____ Date_____	Init _____ Date_____

8[6] Labels applied in accordance with LANL WAC? ☐ YES ☐ NO

Comments: _____

_____

_____

_____

_____

8[7] Performed By: _____ / _____ / _____ / _____
Technician (print) Signature Z# Date

8[10] Verified By: _____ / _____ / _____ / _____
Technician (print) Signature Z# Date

Section 16.1 Attachment 3 - Procedure Change Request

Procedure Change Request

Section #1 – Type of Request

Manual/Procedure No. (if known): EP-DIV-DOP-05013 | Revision: 2.0 "Title"

Title: WDP TRU Waste Container Labeling

Detailed description of requested change (Attach additional sheets if needed. Number additional sheets):

Revise procedure to incorporate process improvements. Incorporate actual instructions for re-labeling waste containers that are not properly labeled. Make editorial corrections as necessary. ~~Change the applicability (scope) of the procedure to include RANT Facility personnel who perform waste container labeling in TA-54 Area G.~~ 2/4/10

Requestor Signature:	Print Name: Ron Smart	Phone: 7-8163	Date: 07/21/09

Section #2 – Procedure Owner Approval for Processing

☐ New Procedure ☒ Major Revision ☐ Minor Revision ☐ Special Procedure
☐ IPC ☐ Deactivation ☐ Cancellation ☐ IPC Rollup

☒ Approved ☐ Disapproved (Return to originator) Priority: High

Procedure Owner Supervisor Signature:	Print Name: Michael Romero	Date: 2/27/09

Section #3 – Review and Concurrence

IPC #: N/A | IPCs Incorporated: N/A | Affected Pages: N/A

Other affected facilities or N/A: N/A Obtain Concurrence all facilities/organizations affected by this change

Review and Concurrence: Review organizations (N/A if not required); document additional review organizations, if needed, on continuation sheet. CSE approval required for all technical procedures except minor revisions, IPC Rollup, and non-AB related cancellations/deactivations. CSE approval always required for changes affecting safety basis steps.

Department:	Print Name:	Signature:	Date:
WDP-TWPS	Rick Martinez	/s/ Rick Martinez	10/05/09
QA-IQ	Robert Trujillo	/s/ Robert Trujillo	07/31/09
IHS-IS	Robert Bement	/s/ Paul Martin for	08/03/09
WDP-TWPS	Dennis Ciocchetti	/s/ Dennis Ciocchetti	2/2/10
RP-1	Joe Bianconi	/s/ John Bey for	08/06/09
ES-SE	Shawn West	/s/ Shawn West	08/10/09
WDP-DO	Mark Shepard	/s/ M. Shepard	2/2/2010

CSE USQ Number (As applicable): WDP-010-068-D

ADC: ☒ Unclassified ☐ OUO ☐ UCNI ☐ Classified 2/4/2010
Print Name PETERS LINDAHL Signature /s/ Peters Lindahl

Section #4 – Training Review

Validation Required: ☒ Yes ☒ No | Document is Authorized to serve as Part I of the IWD: ☒ Yes ☐ No | Periodic Review Requirements Satisfied? ☒ Yes ☐ No

Training Required: ☐ Yes ☒ No | ☐ Classroom/Briefing ☐ On the Job | ☐ Just-in Time ☐ Required Reading | ☐ Hold for Completion of Training ☐ Release Procedure to field

Approval Signature:	Print Name:	Z Number	Date:	Phone:
	Mike Romero	106733	2/17/10	5-7559

Section 16.1 Attachment 3 - Procedure Change Request

Section #1 – Type of Request	
Manual/Procedure No. (if known): EP-DIV-DOP-~~05~~ 0103	Revision: ~~1~~ 0
Title: WDP TRU Waste Container Labeling	
Detailed description of requested change (Attach additional sheets if needed. Number additional sheets): See page 1 of 2	

Requestor Signature:	Print Name:	Phone:	Date:
See page 1 of 2	See page 1 of 2		

Section #2 – Procedure Owner Approval for Processing

☐ New Procedure	☒ Major Revision	☐ Minor Revision	☐ Special Procedure
☐ IPC	☐ Deactivation	☐ Cancellation	☐ IPC Rollup

☒ Approved ☐ Disapproved (Return to originator) Priority: High

Procedure Owner Supervisor Signature:	Print Name:	Date:
See page 1 of 2	Michael Romero	

Section #3 – Review and Concurrence

IPC #: N/A	IPCs Incorporated: N/A	Affected Pages: N/A

Other affected facilities or N/A: N/A Obtain Concurrence all facilities/organizations affected by this change

Review and Concurrence: Review organizations (N/A if not required); document additional review organizations, if needed, on continuation sheet. CSE approval required for all technical procedures except minor revisions, IPC Rollup, and non-AB related cancellations/deactivations. CSE approval always required for changes affecting safety basis steps.

Department:	Print Name:	Signature:	Date:
~~WDP-TWPS~~	~~Lane Gallo~~		~~2/17/10~~
OS-PT	Donald Thorp	/S/ Don Thorp	08/20/09
~~EP-DO~~	~~Julia Wood~~		

CSE USQ Number (As applicable): See pg 1 of 2

ADC: ☐ Unclassified ☐ OUO ☐ UCNI ☐ Classified
Print Name See pg 1 of 2 Signature:

Section #4 – Training Review

Validation Required:	Document is Authorized to serve as Part 1 of the IWD	Periodic Review Requirements Satisfied?
~~☒~~ Yes ☒ No	☒ Yes ☐ No	☒ Yes ☐ No

Training Required:			
☐ Yes ☒ No	☒ Classroom/Briefing	☐ Just-in Time	☐ Hold for Completion of Training
	☐ On the Job	☐ Required Reading	☐ Release Procedure to field

Approval Signature:	Print Name: Z Number	Date:	Phone:
See page 1 of 2	See page 1 of 2		

Information Request No. 12

Attachment:

1. Procedure P151-1 – LANL Packaging and Transportation Program Procedure

No: P151-1
Revision: 3

Issued: 10/05/10
Effective Date: 10/05/10

LANL Packaging and Transportation Program Procedure

1.0 PURPOSE

This document describes the requirements that will be implemented for hazardous and nonhazardous Packaging and Transportation (P&T). This document identifies the appropriate requirements based on the type of off-site shipment and/or on-site transfer performed.

2.0 AUTHORITY AND APPLICABILITY

2.1 Authority

This document is issued under the authority of the Laboratory Director to direct the management and operation of the Laboratory, as delegated to the Associate Director for Nuclear and High-Hazard Operations (ADNHHO) as provided in the Prime Contract. This document derives from the Laboratory Governing Policies, particularly the section on Safety.

- Issuing Authority (IA): Associate Director for Nuclear and High-Hazard Operations (ADNHHO)
- Responsible Manager (RM): Operations Support-Division Office (OS-DO)
- Responsible Office (RO): Operations Support-Packaging and Transportation (OS-PT)

2.2 Applicability

The requirements identified in this document are applicable to Los Alamos National Laboratory (LANL or the Laboratory) P&T activities according to the type of shipment or transfer being performed. OS-PT is responsible for the development, implementation, and maintenance of P&T requirement documents and has institutional oversight responsibilities for all P&T activities.

This document applies to all personnel working at the Laboratory (including Los Alamos National Security, Limited Liability Company [LANS, LLC] employees, contractors, and official visitors) and all others who:

- offer hazardous materials for transfer or shipment,
- cause a hazardous material to be transported,
- perform pre-transportation and transportation functions for hazardous materials as identified in 49 Code of Federal Regulations (CFR) 171.1, *Applicability of Hazardous Materials Regulations (HMR) to persons and functions*,
- cause hazardous materials to be delivered to the Laboratory from Department of Energy (DOE) suppliers,
- perform as a driver or supervisor subject to 49 CFR 350–399, *Subchapter B—Federal Motor Carrier Safety Regulations* (FMCSRs), and
- perform transportation activities provided by regulated carriers and specified in DOE O 460.1C, *Packaging and Transportation Safety*.

3.0 PROCEDURE DESCRIPTION

This document covers a range of P&T activities for hazardous and nonhazardous materials moved off-site and on-site. Personnel performing P&T activities must comply with the requirements of this document through implementation as presented in the Laboratory P&T training program.

The document is divided into the following functional areas of requirements and guidance associated with the following types of shipments or material movements:

1. General requirements (see Section 3.1)
2. Off-site hazardous material shipments compliant with Department of Transportation (DOT) regulations (see Section 3.2)
3. On-site hazardous material transfers compliant with DOT regulations (see Section 3.3)
4. Transportation activities performed in accordance with Safety Basis Documents and implementing P&T Work Instructions (see Section 3.4)
5. Off-site shipments and on-site transfers of materials of national security interest, which are Category I and Category II Special Nuclear Material (SNM), nuclear components, and special assemblies. (see Section 3.5)
6. P&T activities compliant with FMCSR, DOE Orders, and DOT Regulations (see Section 3.6)
7. Transfer activities for radioactive material below the DOT-regulated threshold (see Section 3.7)
8. Other special and unique requirements (see Section 3.8)
9. Waste shipments (see Section 3.9)
10. Receipt of hazardous materials from DOE suppliers (see Section 3.10)
11. Traffic management duties with regard to nonhazardous materials (see Section 3.11)

3.1 General Requirements

1. OS-PT will ensure through training, oversight, and assessments that established P&T programs at the Laboratory meet regulations as applicable.
2. Before a shipment or transfer, the shipping papers for hazardous materials must be reviewed and approved by OS-PT or a Laboratory worker who has been approved as an Authorized Shipper by OS-PT. For guidance or clarification, contact OS-PT.
3. All organizations, facilities, groups, or personnel that schedule, perform, or coordinate the shipment or transfer of hazardous materials between sites at the Laboratory must ensure before initiation that the shipment or transfer is entered into the *P&T Institutional Plan of the Day* (a database that helps facilitate Laboratory-wide coordination of hazardous material transfers and shipments). On-site transfers are those moved on roads where public access is restricted, controlled, or denied through barriers or controlled access points; all others are considered off-site shipments. For guidance or clarification, contact OS-PT.
4. Hazardous materials must not be transported on-site or off-site in a private vehicle. Some off-site P&T activities may require the use of a rental vehicle. Contact OS-PT to ensure that all additional requirements are met.

5. If a facility-specific Documented Safety Analysis (DSA) does not address facility transportation activities, then the transferring of hazardous material must be conducted in accordance with 49 CFR, *Transportation*, (including FMCSR), or P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision).
6. The line organization performing any of the activities listed in Section 2.2 above must develop and submit a procedure for OS-PT review and concurrence before implementation of any of the listed activities.
7. All official communications external to the Laboratory concerning P&T activities must be coordinated through OS-PT.

   This includes incident notification required in 49 CFR 171.16, *Detailed Hazardous Materials Incident Reports*, and 40 CFR 302.6, *Environmental Protection Agency, Notification Requirements*.

   OS-PT requires a unified institutional posture and one-voice communication for the Laboratory P&T program. Organizations must inform OS-PT of campaigns that require any special transportation or packaging support at an early stage in order to meet this requirement.
8. Specific restrictions, limitations, and prohibitions for on-site transfers and off-site shipments of hazardous material are required when the Laboratory goes into Security Condition (SECON) 2 or higher. SECON 2 or higher requires the use of Form 1899, *Heightened Security Transport Request Form*. The *LANL Transportation Security Plan* (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov) assesses the security risks associated with shipping the hazardous materials listed in 49 CFR 172.800, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Safety and Security Plans—Purpose and Applicability,* and includes the appropriate measures to address these risks.
9. Procurement or lease of hazardous materials packagings for transport must use OS-PT approved written procurement specifications and inspection plans. Packaging procurement must meet the quality requirements of P&T-PLAN-025, *Quality Management Plan for P&T* (latest revision) (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov), and P840-1, *Procurement Quality*.
10. DOT general requirements 49 CFR, FMCSR, the hazardous materials transportation-related aspects of 40 CFR 260-299, *Environmental Protection Agency*, and 15 CFR 53.2601-2692, *Toxic Substances Control*, always apply to off-site transportation activities. Non-compliance with 40 CFR, *Protection of Environment*, and FMCSR may occur only for on-site transfers performed in accordance with the Laboratory TSD/Technical Safety Requirements [TSRs] or for facility-specific P&T activities having a facility DSA which is approved by the National Nuclear Security Administration (NNSA) and that addresses facility P&T activities. In these instances, DOE Order requirements apply (see Sections 3.4–3.9).

Table 1 provides regulatory references for use in the identification and packaging of hazardous materials for DOT-compliant shipments and transfers, and for non-compliant on-site transfers. Contact OS-PT for additional guidance and assistance.

Table 1. Material Characteristic and Packaging Requirements		
	Applicable Requirements	
Topic	**Department of Transportation (DOT) Compliant**	**On-Site Transportation Safety Document (TSD)**
Class 1		
Explosives	Material Definition according to 49 CFR 173 Subpart C (173.50-173.63), *Shippers—General Requirements for Shipments and Packagings, Definitions, Classification and Packaging for Class 1*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173 Subpart C (173.50-173.63), or 49 CFR 172.101, P101-8, *Explosives Safety* Packaging according to DOE O 461.1A, *Packaging and Transfer or Transportation of Materials of National Security Interest*, and/or DOE M 440.1-1A, *DOE Explosives Safety Manual* P&T-AP-021, *High Explosives Shipment Routing (Chemistry and Metallurgy Research [CMR] TSR-AC 5.6.2)*
Class 2		
Division 2.1 Flammable Gas	Material Definition according to 49 CFR 173.115(a), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (a) Division 2.1 (Flammable Gas)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.115(a), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14

Table 1. Material Characteristic and Packaging Requirements		
Topic	**Applicable Requirements**	
	Department of Transportation (DOT) Compliant	**On-Site Transportation Safety Document (TSD)**
Class 2 (Cont.)		
Division 2.2 Non-flammable, non-poisonous, compressed gas	Material Definition according to 49 CFR 173.115(b), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (b) Division 2.2 (non-flammable, non-poisonous, compressed gas—including compressed gas, liquefied gas, pressurized cryogenic gas, compressed gas in solution, asphyxiant gas and oxidizing gas),* or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.115(b), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Division 2.3 Gas poisonous by inhalation	49 CFR 173.115(c), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (c) Division 2.3 (Gas poisonous by inhalation)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.115(c), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Class 3		
Flammable Liquid	Material Definition according to 49 CFR 173.120, *Shippers—General Requirements for Shipments and Packagings, Class 3—Definitions, (a) Flammable Liquid*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.120, or 49 CFR 172.101 Packaging according P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14

Table 1. Material Characteristic and Packaging Requirements		
	Applicable Requirements	
Topic	**Department of Transportation (DOT) Compliant**	**On-Site Transportation Safety Document (TSD)**
Class 4		
Division 4.1 Flammable Solid	Material Definition according to 49 CFR 173.124(a), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (a) Division 4.1, (Flammable Solid)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.124(a), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Division 4.2 Spontaneously Combustible Material	Material Definition according to 49 CFR 173.124(b), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (b) Division 4.2, (Spontaneously Combustible Material)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.124(b), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Division 4.3 Dangerous When Wet	Material Definition according to 49 CFR 173.124(c), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (c) Division 4.3 (Dangerous when wet material)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.124(c), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14

Table 1. Material Characteristic and Packaging Requirements		
	Applicable Requirements	
Topic	**Department of Transportation (DOT) Compliant**	**On-Site Transportation Safety Document (TSD)**
Class 5		
Division 5.1 Oxidizer	Material Definition according to 49 CFR 173.127, *Shippers—General Requirements for Shipments and Packagings, Class 5, Division 5.1—Definition and assignment of packing groups*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.127, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Division 5.2 Organic Peroxide	Material Definition according to 49 CFR 173.128, *Shippers—General Requirements for Shipments and Packagings, Class 5, Division 5.2—Definitions and types*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.128, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Class 6		
Division 6.1 Poisonous Material	Material Definition according to 49 CFR 173.132, *Shippers—General Requirements for Shipments and Packagings, Class 6, Division 6.1—Definitions*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.132, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14

Table 1. Material Characteristic and Packaging Requirements		
	Applicable Requirements	
Topic	**Department of Transportation (DOT) Compliant**	**On-Site Transportation Safety Document (TSD)**
Class 6 (Cont.)		
Division 6.2 Infectious Substance	Material Definition according to 49 CFR 173.134, *Shippers—General Requirements for Shipments and Packagings, Class 6, Division 6.2—Definitions and exceptions*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.134, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Class 7		
Radioactive	Material Definition according to 49 CFR 173.433, *Shippers—General Requirements for Shipments and Packagings, Requirements for determining basic radionuclide values, and for the listing of radionuclides on shipping papers and labels*, and 49 CFR 173.436, *Shippers—General Requirements for Shipments and Packagings, Exempt material activity concentrations and exempt consignment activity limits for radionuclides** Packaging according to Columns 5 and 8 of 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions*	Material Definition according to 49 CFR 173.433 and 49 CFR 173.436 Packaging according to: ▪ P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision) ▪ P&T-TSR-001, *Technical Safety Requirements* (latest revision) ▪ SER TSD.01, *Safety Evaluation Report Approving Los Alamos National Laboratory (LANL) Transportation Safety Document (TSD)* (latest revision)
* Requirements of P121, *Radiation Protection*, also apply.		

Table 1. Material Characteristic and Packaging Requirements		
	Applicable Requirements	
Topic	**Department of Transportation (DOT) Compliant**	**On-Site Transportation Safety Document (TSD)**
Class 8		
Corrosive	Material Definition according to 49 CFR 173.136, *Shippers—General Requirements for Shipments and Packagings, Class 8—Definitions*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101, and 49 CFR 173.137, *Shippers—General Requirements for Shipments and Packagings, Class 8—Assignment of packing group*	Material Definition according to 49 CFR 173.136, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Class 9		
Miscellaneous	Material Definition according to 49 CFR 173.140, *Shippers—General Requirements for Shipments and Packagings, Class 9—Definitions*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.140, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Other Regulated Materials (ORMs)	Material Definition according to 49 CFR 173.144, *Shippers—General Requirements for Shipments and Packagings, Other Regulated Materials (ORMs)-Definitions*, and 49 CFR 172.101 No Packaging Specified	Not Applicable
If there are questions regarding applicable requirements, contact Operations Support-Packaging and Transportation (OS-PT).		

Table 2 provides regulatory references that are applicable to all shipments and transfers, and a representative selection of exceptions that are frequently used at the Laboratory.

Table 2. General Requirements for Off-Site and Compliant/Noncompliant On-Site Shipments

Shipment/Transfer Requirement or Exception	Regulatory Reference
Federal Motor Carrier Safety Regulation (FMCSR)	49 CFR 350–399, *Federal Motor Carrier Safety Regulations*
Shipping Papers	49 CFR 172 Subpart C, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Shipping Papers*
Marking	49 CFR 172 Subpart D, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Marking*
Labeling	49 CFR 172 Subpart E, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Labeling*
Placarding	49 CFR 172 Subpart F, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Placarding*
Emergency Response Information	49 CFR 172 Subpart G, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Emergency Response Information*
Training	49 CFR 172 Subpart H, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Training*
Safety And Security Plans	49 CFR 172 Subpart I, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Safety And Security Plans*, (Parts 172.800-804 for highway)
Commonly used exceptions	
Small Quantity Exceptions	49 CFR 173.4, *Shippers—General Requirements for Shipments and Packagings, Small Quantity Exceptions*
Materials of Trade Exceptions	49 CFR 173.8, *Shippers—General Requirements for Shipments and Packagings, Exceptions for non-specification packagings used in intrastate transportation*
Use of packagings authorized under special permits	49 CFR 173.22a, *Shippers—General Requirements for Shipments and Packagings, Use of packagings authorized under special permits*
Excepted packages for limited quantities of Class 7 (radioactive) materials	49 CFR 173.421, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for limited quantities of Class 7 (radioactive) materials*
Excepted packages for radioactive instruments and articles	49 CFR 173.424, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for radioactive instruments and articles*
Excepted packages for articles containing natural uranium or thorium	49 CFR 173.426, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for articles containing natural uranium or thorium*

Table 2. General Requirements for Off-Site and Compliant/Noncompliant On-Site Shipments	
Shipment/Transfer Requirement or Exception	**Regulatory Reference**
Transport requirements for Low Specific Activity (LSA) Class 7 (radioactive) materials and Surface Contaminated Objects (SCO)	49 CFR 173.427, *Shippers—General Requirements for Shipments and Packagings, Transport requirements for low specific activity (LSA) Class 7 (radioactive) materials and surface contaminated objects (SCO)*
Empty Class 7 (radioactive) materials packaging	49 CFR 173.428, *Shippers—General Requirements for Shipments and Packagings, Empty Class 7 (radioactive) materials packaging*
Fissile materials—exceptions	49 CFR 173.453, *Shippers—General Requirements for Shipments and Packagings, Fissile materials—exceptions*
Hazardous Communication for Class 7 Radioactive Material Shipments*	Form 2114, *Hazard Communication for Radioactive Material Shipments*
If there are questions regarding applicable requirements, contact Operations Support-Packaging and Transportation (OS-PT).	
* Required for on-site transfers of radioactive material.	

11. Form 2114, *Hazard Communication for Radioactive Material Shipments*, must be completed and accompany shipping papers for internal (between Technical Areas [TAs] at the Laboratory) shipments of Class 7 radioactive material when the package will be opened at the Laboratory receiving organization.
12. Items and/or empty packagings that are potentially contaminated by explosives are not to be transported on commercial passenger aircraft.

When 49 CFR, *Transportation* and DOE Orders are both applicable to a transportation activity and a conflict is noted, the more stringent of the two requirements must be met.

3.2 Department of Transportation (DOT) Compliant Off-Site Hazardous Material Shipments

All P&T activities in support of off-site shipments must meet 49 CFR, *Transportation* requirements. Personnel performing these activities must be trained and qualified in accordance with the Laboratory Hazardous Materials Packaging and Transportation (HMPT) training program.

Line personnel performing packager and shipper activities, with the intent to ship off-site, must be authorized by OS-PT before performing any P&T activities. Off-site is any area within or outside a DOE site to which the public has free and uncontrolled access; on-site is any area within the boundaries of a DOE site or facility to which access is controlled.

Note: Refer to Table 1 for guidance on applicable 49 CFR requirements associated with the shipment hazard class. In addition, shipping personnel must notify the Emergency Operations Center (EOC) in advance of a scheduled shipment, and must communicate emergency information to the EOC before initiating the shipment.

For each shipment of fissile material or more than Type "A" quantity of radioactive material, the consignee must be notified of the date of the shipment, the expected date of arrival and any special loading or unloading instructions. The consignee is required to notify the shipper by the end of the first working day after the estimated arrival date if the shipment has not been received.

Type "B" packages must be certified by a competent authority, such as DOE or the Nuclear Regulatory Commission (NRC), with a valid Certificate of Compliance or equivalent certification. The package use must comply with all specified requirements and limitations. Type "B" packages authorized under a Safety Analysis Report for Packaging (SARP) must only be used if the Laboratory is an authorized user of the packaging.

National Security Interest shipments of Type "B" quantities of radioactive materials that do not comply with 10 CFR 71, *Packaging and Transportation of Radioactive Material,* requirements will require an Off-Site Transportation Authorization (OTA) and must include a Transportation System Risk Assessment (TSRA) Contact OS-PT for OTA and TSRA development support.

Line organizations that use Type "B" containers in accordance with a Certificate of Compliance or equivalent certification must have implemented a quality-assurance plan that meets the requirements in 10 CFR 71 Subpart H, *Packaging and Transportation of Radioactive Material, Quality Assurance.* If the line organization has its own plan, it must be reviewed and approved by OS-PT. P&T-PLAN-025, *Quality Management Plan for P&T* (latest revision) (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov) can be referenced and implemented.

- P&T-Plan-028, *Type B Quality Assurance Plan* (current revision).

3.3 Department of Transportation (DOT) Compliant On-Site Hazardous Material Transfers

All P&T activities in support of compliant on-site transfers must meet requirements of FMCSR and DOE Orders.

Personnel performing these activities must be trained and qualified in accordance with the Laboratory HMPT training program.

Refer to Table 1 and Table 2 for guidance on applicable 49 CFR, *Transportation*, requirements.

Refer to Section 3.2 for guidance regarding Type "B" radioactive material packaging.

Emergency information must be communicated to OS-PT before a scheduled transfer.

3.4 Transportation Activities Performed in Accordance With Safety Basis Documents

P&T activities regulated by DOE/NNSA Approved Safety Basis Documents are considered nuclear activities and must comply with additional requirements applicable to Laboratory nuclear activities. The documents noted in Section 3.4.2 form the safety basis. The TSD and the TSR (or an NNSA approved facility DSA that addresses facility transportation activities between TAs and areas within the Laboratory) satisfy the safety basis for the transfer of nuclear materials, which is required by 10 CFR 830 Subpart B, *Department of Energy, Safety Basis Requirements*, for transportation of greater than or equal to Hazard Category (HC)-3 quantities of nuclear materials that are not transported in accordance with the requirements of 49 CFR, *Transportation*.

Refer to Table 1 and Table 2 for guidance on applicable 49 CFR and on-site TSD transfer requirements.

3.4.1 Applicability

Applicability of this section is based on the material categorization descriptions contained in the DOE/NNSA-approved safety-basis documents.

Types of materials applicable to safety basis requirements include:

- non-waste radioactive material,
- radioactive waste,
- tritium,
- radioactive solutions/liquids, and
- other hazardous materials (as deemed necessary).

The material quantities and applicable requirements of the safety basis are:

- P&T transfers with ≥HC-3 quantities of nuclear materials must comply with P&T-TSR-001, *Technical Safety Requirements (*latest revision)
- P&T transfers with <HC-3 quantities of nuclear materials and nonnuclear hazardous materials must comply with P&T-SA-002, *Transportation Safety Document (TSD)*, Chapter 14 (latest revision)
- P&T transfers of explosives moved on roads where public access is restricted, controlled, or denied either through barriers or through controlled access points must comply with DOE M 440.1-1A, *DOE Explosives Safety Manual*, Section 16, *Transportation*, and/or DOE O 461.1A, *Packaging and Transfer or Transportation of Materials of National Security Interest*

Any facility that identifies P&T activities in their NNSA-approved DSA may perform their P&T activities in accordance with their own requirements.

3.4.2 Requirements

Line organizations must implement organization-specific procedures in accordance with the following DOE/NNSA approved safety-basis documents:

- SER TSD.01, *Safety Evaluation Report* (latest revision)
- P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision)
- P&T-TSR-001, *Technical Safety Requirements* (latest revision)

3.5 Transportation of Materials of National Security Interest—Off-Site and On-Site

Laboratory line organizations that propose items of national security interest for (off-site) shipment must submit tie-down procedures with supporting analysis to OS-PT for review and approval. OS-PT will coordinate and obtain NNSA concurrence. Tie-down procedures only require initial approval. If a previously approved tie-down procedure is applicable, line organizations must reference the applicable tie-down procedure.

Laboratory line organizations must submit Transportation Shipping Requests using the form titled *US DOE Office of Secure Transportation—Transportation Services Request* (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov). The initial Transportation Shipping Request must be submitted to OS-PT a minimum of 90 days before the proposed shipment date.

All transport of special assemblies for off-site transportation must have a DOE/NNSA Service Center-issued Off-Site Transportation Authorization (OTA) or an exemption that is granted by the Deputy Administrator for Defense Programs.

Laboratory line organizations that use motor vehicles to transfer items of national security interest off-site or on-site must comply with the applicable FMCSR requirements.

Laboratory line organizations must use government or contractor-owned or leased vehicles to perform NNSA off-site transportation operations of material of national security interest and request OS-PT approval for these operations.

3.6 Packaging and Transportation (P&T) Activities Compliant with Federal Motor Carrier Safety Regulation (FMCSR) and Department of Energy (DOE) Orders

OS-PT administers the program that manages implementation of FMCSR at the Laboratory and is the approval authority for qualifying Laboratory drivers subject to these requirements.

Laboratory line organizations that operate a Government or Contractor vehicle (owned or leased) off-site and on-site in performance of contract activities must comply with applicable regulations of 49 CFR, *Transportation*, FMCSR, and applicable state, tribal, and local regulations not preempted by DOT.

Line organizations must ensure that before transporting quantities of placarded explosives or Highway Route Controlled Quantities of Class 7 Radioactive materials, an approved route plan meeting the requirements of 49 CFR 397 Subpart C, *Federal Motor Carrier Safety Administration, DOT, Routing of Non-Radioactive Hazardous Materials*, and 49 CFR 397 Subpart D, *Federal Motor Carrier Safety Administration, DOT, Routing of Class 7 (Radioactive) Materials*, is properly executed. Contact OS-PT for assistance as needed.

Hazardous Material transport is restricted to drivers who possess a Commercial Driver's License (CDL) with the appropriate hazardous material endorsements. CDL drivers must have on file with OS-PT a Driver Qualification File as described in 49 CFR 391.51, *Federal Motor Carrier Safety Administration, DOT, General Requirements for Driver Qualification Files*.

CDL drivers are subject to drug and alcohol testing under a Laboratory-specific DOT testing program.

A CDL driver's Responsible Line Manager (RLM) is responsible for facilitating an alcohol test within two hours of an accident and a controlled substance test within 32 hours of an accident.

A CDL driver's RLM is required by 49 CFR 382.603, *Federal Motor Carrier Safety Administration, DOT, Controlled Substances and Alcohol Use and Testing, Training for Supervisors*, to have 60 minutes of training on controlled substance use and 60 minutes of training on alcohol misuse.

A CDL driver's RLM is responsible for ensuring that the CDL driver's record of on-duty time is recorded and reviewed to ensure compliance with 49 CFR 395, *Federal Motor Carrier Safety Administration, DOT, Hours of Service of Drivers*. The RLM is responsible for identifying Commercial Motor Vehicles used in his/her operation and coordinating current identification with OS-PT.

Training is required for all drivers subject to FMCSR.

See the OS-PT webpage for additional guidance.

3.7 Transfer Activities for Radioactive Material below the Department of Transportation (DOT)-Regulated Threshold

3.7.1 Applicability of Nonregulated Radioactive Materials

Nonregulated radioactive materials are concentrations and/or consignments that are exempt from FMCSR requirements. Nonregulated radioactive materials must still meet the requirements of P121, *Radiation Protection.* All determinations of both DOT-regulated and unregulated radioactive materials must be performed by HMPT-trained and -qualified personnel. OS-PT will support DOT determinations as required upon request. The shipper must provide characterization data for the material to OS-PT.

3.7.2 Requirements

A Radiological Control Technician must perform receipt surveys of radioactive material, as required by P121, *Radiation Protection.*

A Radiological Control Technician must perform receipt surveys of radioactive material shipments when received at the final destination facility and/or the central shipping and receiving warehouse before the shipping vehicle leaves that facility.

Radioactive material must be packaged so that the package integrity is maintained to prevent the release of contamination during transport; higher-risk materials require more robust packaging. The following packing and transportation factors must be considered:

- the package must withstand anticipated mechanical stresses,
- the package's external contamination must be within limits prescribed by P121,
- the package must not contain any free-standing liquids on the exterior surface of the package, and
- the package must be sealed so as to prevent any leak path into or out of the package.

3.8 Transportation Activities with Special and Unique Requirements

3.8.1 Safeguards and Security Requirements

Laboratory organizations must comply with the Laboratory safeguards and security requirements for off-site transportation and on-site transfers. They must also comply with specific requirements contained in the *LANL SECON Implementation Plan*, including the use of Form 1899, *Heightened Security Transport Request Form.*

3.8.2 Off-Site Transportation of Special Assemblies

Off-site transportation of special assemblies must comply with DOE O 461.1A, *Packaging and Transfer or Transportation of materials of National Security Interest.*

3.8.3 Environmental and Other Samples

All sampling activities must undergo a pre-sampling screening process to evaluate the potential or actual presence of DOT-regulated materials. The screening process will include, but not be limited to, the following:

- a review of appropriate Laboratory operating records and documents from the site, or nearby sites,
- a review of appropriate samples previously taken from the site, or nearby sites, and
- a review of any anecdotal information available about the site.

If the site has been sampled previously, and no hazardous materials are indicated, pre-sampling screening will not be required.

The pre-sampling testing will include, but will not be necessarily limited to:

- For radionuclides (Class 7 Radioactive) using available portable equipment to identify the presence and quantity (if possible) of radionuclides.
- For other hazardous materials, use of appropriate portable equipment and field testing techniques to determine the presence and quantity of hazardous materials.

It is recognized that detailed characterization knowledge of a sample will not be known until the analysis of the sample. However, to support determination of the requirements for sample shipment or transfer from the sampling site, all available information must be considered, and a reasonably conservative approach must be used when categorizing and packaging a sample.

Samples known to contain, or suspected of containing, hazardous materials must be classified, packaged, and transported in accordance with DOT HMRs or the TSD.

Samples subjected to the screening provisions above that do not indicate the presence of regulated hazardous materials are not subject to the requirements of the DOT Hazardous Material Regulations. The waste generator should retain any records or documents that show samples do not indicate the presence of hazardous materials in accordance with P1020-1, Laboratory Records Management, and DOE National Archives & Records Administration (NARA) Records Schedules.

The application and results of this methodology for characterization of a sample, and the sampling procedures used to take and control the samples, must be documented and stored as part of a site sampling plan.

3.9 Los Alamos National Laboratory (LANL) Waste Transportation

Off-site shipments and on-site transfers of waste must meet requirements of P930-1, *LANL Waste Acceptance Criteria,* and P930-3, *Off-Site Shipment of Chemical, Hazardous, or Radioactive Waste*.

Effective June 1, 2008, the use of open-top roll-off bins designed to be covered by a tarpaulin will not be allowed for transport of materials to TA-54.

3.10 Receipt of Hazardous Materials from Department of Energy (DOE) Suppliers

All hazardous materials excluding Hazard Class 9 miscellaneous hazardous materials sent to the Laboratory from DOE suppliers must be authorized by the Laboratory before the hazardous material is placed in transit. Authorization is obtained from the OS-PT Service Center through the use of Form 2180, *Hazardous Material/Classified Components Receipt from DOE Facilities* (latest revision), (available from the LANL Forms Center, by calling 664-0765, or by e-mailing lanlran@lanl.gov).

P151-2, *Hazardous Material/Classified Components Receipt from DOE Facilities*, outlines the process and requirements for the receipt of hazardous materials from DOE suppliers.

3.11 Traffic Management

The OS-PT Facility Operations Director (FOD) provides oversight and guidance to ensure traffic management is conducted as specified in DOE Orders, including the following:

- carrier qualification and selection (general freight, hazardous material shipments, and classified material shipments),
- shipment preparation for domestic and international transport, and
- procurement of commercial transport services, including all related functions such as rate analysis, carrier interface, bill payment, claims, and systems.
- all off-site shipments must be coordinated using the automated transportation management system and must be self-insured. If the shipment qualifies as a special circumstance defined by 48 CFR 47.102, *Federal Acquisition Regulation, Transportation, Transportation Insurance*, contact OS-PT before shipping.
- all commercial bills of lading covering shipments made by or to DOE contractors on DOE's behalf must provide for consignment of the shipment as follows:

  TO: US Department of Energy in care of (name of DOE contractor)

  FROM: LANS, LLC on behalf of the US Department of Energy

- the requirements of DOE O 460.2A, *Departmental Materials Transportation and Packaging Management,* must be met.

4.0 RESPONSIBILITIES

4.1 Operations Support-Packaging and Transportation (OS-PT) Facility Operations Director (FOD)

- Ensures that the hazardous materials P&T program is in place and that Laboratory organizations performing P&T activities are in compliance with appropriate requirements.
- Delegates roles and responsibilities to OS-PT; however, the OS-PT FOD retains all accountability for the Laboratory P&T program.

4.2 Operations Support-Packaging and Transportation (OS-PT)

- Supports the OS-PT FOD in administering the Laboratory institutional P&T and FMCSR programs.
- Performs/supports transportation of the following:
  - Materials of national security interest
  - Transfers under the TSD and TSRs
  - Radioactive materials below the DOT regulatory threshold
- Develops, communicates, and implements the Laboratory P&T program policy in compliance with 49 CFR, *Transportation*, DOE Orders, and internal requirements.
- Periodically assesses site organizations to ensure that requirements are understood and implemented.
- Provides Subject Matter Expert (SME) support to Laboratory training organizations in administering the hazardous materials P&T training program.
- Supports Laboratory organizations on P&T activities as requested.
- Develops and maintains the Laboratory P&T program policy and requirements documents.
- Supports Laboratory line organizations with the development of P&T implementing procedures, when requested.
- Reviews and concurs with Laboratory line organizations' implementing procedures.
- Serves as the Laboratory P&T program representative with external organizations, including regulating entities.
- Conveys pertinent changes in regulatory requirements to the Laboratory as they occur.

4.3 Line Organizations

- Ensure that all personnel who support and/or perform packaging, transfer, and transportation operations are trained, qualified, and authorized to perform their assigned functions.
- Develop implementing procedures to meet Laboratory P&T requirements in accordance with an approved Quality Assurance Plan.
- Communicate at an early stage to OS-PT any specific/unique programmatic P&T requirements, including ongoing activities, new campaigns, and outstanding issues.

5.0 IMPLEMENTATION

The requirements in this document are effective on the issue date.

6.0 TRAINING

The training program must comply with the applicable basic hazardous material training requirements of 49 CFR 172 Subpart H, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Training*. Training for FMCSR and hazardous/radioactive materials P&T activities is provided through the Laboratory training organization. Off-site training may be accepted upon completion of an equivalency determination performed by Laboratory training personnel. Contact OS-PT for information.

OS-PT performance evaluations are required for Laboratory personnel designated as "Authorized Shippers, Packagers, and Drivers." RLMs grant the authority to perform HMPT activities and must coordinate those worker authorizations for P&T functions with the OS-PT FOD.

Contact OS-PT for information regarding the Laboratory P&T training program.

7.0 EXCEPTION OR VARIANCE

To obtain an exception or variance to this document, see the following instructions:

- Managers may request an exception or variance from the ADNHHO, through the OS-PT FOD.
- At the ADNHHO's request, the OS-PT FOD will provide a recommendation or supporting information.
- The ADNHHO or designee will provide the requestor with a written response with a copy to the OS-PT FOD.

The requesting organization must maintain the official copy of record of the approved correspondence granting the exception or variance.

8.0 DOCUMENTS AND RECORDS

8.1 Office of Record

The Policy Office is the Laboratory office of record for this institutional document and maintains the administrative record.

OS-PT is the office of record for oversight activities associated with the Laboratory P&T program, including outgoing correspondence and OTA/Off-Site Transportation Certificate (OTC) related documentation.

9.0 DEFINITIONS AND ACRONYMS

9.1 Definitions

See LANL *Definition of Terms*.

9.2 Acronyms

See LANL *Acronym Master List*.

ADNHHO	Associate Director for Nuclear and High-Hazard Operations
CDL	Commercial Driver's License
CFR	Code of Federal Regulation
CMR	Chemistry and Metallurgy Research
DOE	Department of Energy
DOT	Department of Transportation
DSA	Documented Safety Analysis
EOC	Emergency Operations Center
FMCSR	Federal Motor Carrier Safety Regulation
FOD	Facility Operations Director
Hazmat	Hazardous Materials
HC	Hazard Category
HMPT	Hazardous Materials Packaging and Transportation
HMR	Hazardous Materials Regulation

IA	Issuing Authority
IPP	Institutional Policy and Implementation Procedure
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security, LLC
LSA	Low Specific Activity
NARA	National Archives & Records Administration
NNSA	National Nuclear Security Administration
NRC	Nuclear Regulatory Commission
ORM	Other Regulated Material
OS-DO	Operations Support-Division Office
OS-PT	Operations Support-Packaging and Transportation
OTA	Off-Site Transportation Authorization
OTC	Off-Site Transportation Certificate
P&T	Packaging and Transportation
RLM	Responsible Line Manager
RM	Responsible Manager
RO	Responsible Office
SARP	Safety Analysis Report for Packaging
SCO	Surface Contaminated Object
SECON	Security Condition
SER	Safety Evaluation Report
SME	Subject Matter Expert
SNM	Special Nuclear Material
TA	Technical Area
TSD	Transportation Safety Document
TSR	Technical Safety Requirement
TSRA	Transportation System Risk Assessment
USI	Unreviewed Safety Issue
USQ	Unreviewed Safety Question

10.0 HISTORY

Revision History		
05/30/08	P151-1, Rev. 0	Initial Issue. This document replaces and cancels Institutional Policy and Implementation Procedure (IPP) 525.2, *Hazardous Material (Hazmat) Packaging and Transportation.*
03/29/10	P151-1, Rev. 1	Added requirements to be used when receiving hazardous materials from other DOE facilities. Added flowdown requirements from DOE O 460.2A, *Departmental Materials Transportation and Packaging Management.* Fixed links, titles, and acronyms.
06/01/10	P151-1, Rev. 2	Section 5.0 was revised and updated.

Revision History		
10/05/10	P151-1, Rev. 3	Replaced P&T Form-091, *LANL Authorization to Ship* with Form 2180, *Hazardous Material/Classified Components Receipt from DOE Facilities.* Referenced P151-2, *Hazardous Material/Classified Components Receipt from DOE Facilities* for the receipt of hazardous materials from DOE facilities. Deleted requirements under Section 3.10 that are covered in P151-2. In accordance with P311-1, *Creating, Revising, and Cancelling Institutional Documents*, deleted requirement in Section 5.0 for Unreviewed Safety Question/Unreviewed Safety Issue (USQ/USI) review, as this review is not required for an Institutional Document Quick Change.

11.0 REFERENCES

Prime Contract:

- Part III, Section J, Appendix G
- 49 CFR 171.1, *Applicability of Hazardous Materials Regulations (HMR) to persons and functions*
- 49 CFR 350–399, *Federal Motor Carrier Safety Regulations*
- DOE O 460.1C, *Packaging and Transportation Safety*
- 49 CFR, *Transportation*
- 49 CFR 171.16, *Detailed Hazardous Materials Incident Reports*
- 40 CFR 302.6, *Environmental Protection Agency, Notification Requirements*
- 49 CFR 172.800, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Safety and Security Plans—Purpose and Applicability*
- 40 CFR 260-299, *Environmental Protection Agency*
- 15 CFR 53.2601-2692, *Toxic Substances Control*
- 40 CFR, *Protection of Environment*
- 49 CFR 173 Subpart C (173.50-173.63), *Shippers—General Requirements for Shipments and Packagings, Definitions, Classification and Packaging for Class 1*
- 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions*
- DOE O 461.1A, *Packaging and Transfer or Transportation of Materials of National Security Interest*
- DOE M 440.1-1A, *DOE Explosives Safety Manual*
- 49 CFR 173.115(a), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (a) Division 2.1 (Flammable Gas)*
- 49 CFR 173.115(b), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (b) Division 2.2 (non-flammable, non-poisonous, compressed gas—including compressed gas, liquefied gas, pressurized cryogenic gas, compressed gas in solution, asphyxiant gas and oxidizing gas)*

- 49 CFR 173.115(c), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (c) Division 2.3 (Gas poisonous by inhalation)*
- 49 CFR 173.120, *Shippers—General Requirements for Shipments and Packagings, Class 3—Definitions, (a) Flammable Liquid*
- 49 CFR 173.124(a), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (a) Division 4.1, (Flammable Solid)*
- 49 CFR 173.124(b), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (b) Division 4.2, (Spontaneously Combustible Material)*
- 49 CFR 173.124(c), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (c) Division 4.3 (Dangerous when wet material)*
- 49 CFR 173.127, *Shippers—General Requirements for Shipments and Packagings, Class 5, Division 5.1—Definition and assignment of packing groups*
- 49 CFR 173.128, *Shippers—General Requirements for Shipments and Packagings, Class 5, Division 5.2—Definitions and types*
- 49 CFR 173.132, *Shippers—General Requirements for Shipments and Packagings, Class 6, Division 6.1—Definitions*
- 49 CFR 173.134, *Shippers—General Requirements for Shipments and Packagings, Class 6, Division 6.2—Definitions and exceptions*
- 49 CFR 173.433, *Shippers—General Requirements for Shipments and Packagings Requirements for determining basic radionuclide values, and for the listing of radionuclides on shipping papers and labels*
- 49 CFR 173.436, *Shippers—General Requirements for Shipments and Packagings, Exempt material activity concentrations and exempt consignment activity limits for radionuclides*
- 49 CFR 173.136, *Shippers—General Requirements for Shipments and Packagings, Class 8—Definition*
- 49 CFR 173.137, *Shippers—General Requirements for Shipments and Packagings Class 8—Assignment of packing group*
- 49 CFR 173.140, *Shippers—General Requirements for Shipments and Packagings, Class 9—Definitions*
- 49 CFR 173.144, *Shippers—General Requirements for Shipments and Packagings, Other Regulated Materials (ORMs)-Definitions*
- 49 CFR 172 Subpart C, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Shipping Papers*
- 49 CFR 172 Subpart D, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Marking*
- 49 CFR 172 Subpart E, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Labeling*
- 49 CFR 172 Subpart F, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Placarding*
- 49 CFR 172 Subpart G, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Emergency Response Information*

- 49 CFR 172 Subpart H, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Training*
- 49 CFR 172 Subpart I, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Safety And Security Plans*, (parts 172.800-804 for highway)
- 49 CFR 173.4, *Shippers—General Requirements for Shipments and Packagings, Small Quantity Exceptions*
- 49 CFR 173.8, *Shippers—General Requirements for Shipments and Packagings, Exceptions for non-specification packagings used in intrastate transportation*
- 49 CFR 173.22a, *Shippers—General Requirements for Shipments and Packagings, Use of packagings authorized under special permits*
- 49 CFR 173.421, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for limited quantities of Class 7 (radioactive) materials*
- 49 CFR 173.424, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for radioactive instruments and articles*
- 49 CFR 173.426, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for articles containing natural uranium or thorium*
- 49 CFR 173.427, *Shippers—General Requirements for Shipments and Packagings, Transport requirements for low specific activity (LSA) Class 7 (radioactive) materials and surface contaminated objects (SCO)*
- 49 CFR 173.428, *Shippers—General Requirements for Shipments and Packagings, Empty Class 7 (radioactive) materials packaging*
- 49 CFR 173.453, *Shippers—General Requirements for Shipments and Packagings, Fissile materials—exceptions*
- 10 CFR 71, *Packaging and Transportation of Radioactive Material*
- 10 CFR 71 Subpart H, *Packaging and Transportation of Radioactive Material, Quality Assurance*
- 10 CFR 830 Subpart B, *Department of Energy, Safety Basis Requirements*
- 49 CFR 397 Subpart C, *Federal Motor Carrier Safety Administration, DOT, Routing of Non-Radioactive Hazardous Materials*
- 49 CFR 397 Subpart D, *Federal Motor Carrier Safety Administration, DOT, Routing of Class 7 (Radioactive) Materials*
- 49 CFR 391.51, *Federal Motor Carrier Safety Administration, DOT, General Requirements for Driver Qualification Files*
- 49 CFR 382.603, *Federal Motor Carrier Safety Administration, DOT, Controlled Substances and Alcohol Use and Testing, Training for Supervisors*
- 49 CFR 395, *Federal Motor Carrier Safety Administration, DOT, Hours of Service of Drivers*
- 48 CFR 47.102, *Federal Acquisition Regulation, Transportation, Transportation Insurance*
- DOE O 460.2A, *Departmental Materials Transportation and Packaging Management*

11.1 Other References

- *P&T Institutional Plan of the Day*
- P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision)
- *LANL Transportation Security Plan* (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov)
- P&T-PLAN-025, *Quality Management Plan for P&T* (latest revision) (available from the P&T Service Center)
- P840-1, *Procurement Quality*
- P101-8, *Explosives Safety*
- P&T-AP-021, *High Explosives Shipment Routing (Chemistry and Metallurgy Research [CMR] TSR-AC 5.6.2)*
- P&T-TSR-001, *Technical Safety Requirements* (latest revision)
- SER TSD.01, *Safety Evaluation Report* (latest revision)
- P121, *Radiation Protection*
- P&T-Plan-028, *Type B Quality Assurance Plan* (current revision)
- OS-PT webpage
- *LANL SECON Implementation Plan*
- P1020-1, *Laboratory Records Management*
- P930-1, *LANL Waste Acceptance Criteria*
- P930-3, *Off-Site Shipment of Chemical, Hazardous, or Radioactive Waste*
- P151-2, *Hazardous Material/Classified Components Receipt from DOE Facilities*
- P311-1, *Creating, Revising, and Cancelling Institutional Documents*

12.0 FORMS

Form 1899, *Heightened Security Transport Request Form*
Form 2114, *Hazard Communication for Radioactive Material Shipments*
US DOE Office of Secure Transportation—Transportation Shipping Request (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov)
Form 2180, *Hazardous Material/Classified Components Receipt from DOE Facilities*
Form 1458, *Excepted Package Form*
Form 1468, *Hazardous Materials Transfer (other than radioactive)*
Form 1586, *Radioactive Materials Transfer*
Form 1586-con, *Radioactive Materials Transfer–Continuation Page*
Form 1686, *Express Document Shipment Request* (for shipping FedEx documents)
Form 1768, *Shipping Request* (for shipping materials)

13.0 ATTACHMENTS

There are no attachments associated with this document.

14.0 CONTACT

Operations Support-Packaging and Transportation Group (OS-PT)
Telephone: (505) 665-8628
Fax: (505) 667-9829
Location: TA-3, Building 30, Room W133E
E-mail: pnt@lanl.gov

Information Request No. 13

Attachment

1. LANL Statement of Work for Characterization of LANL TRU Waste (Contact Handled & Remote Handled)

LOS ALAMOS NATIONAL LABORATORY (LANL)

PBS VL-LANL-0013
WIPP Program Code SP27

STATEMENT OF WORK FOR CHARACTERIZATION OF LANL TRU WASTE (Contact Handled & Remote Handled)

Approved: _____ 3/30/2008
Gerald A. O'Leary, Project Director, Date
LANL TRU Waste Disposition Projects

Approved: _____ 04/11/08
Reanna Sharp-Geiger, Division Leader, LANL Date
Environment & Waste Management Facility Operations

Approved: _____ 4/16/08
Farok Sharif, General Manager, WTS Date

1.0 SCOPE

1.1 Background

DOE has approved a Performance Management Plan (PMP) for accelerated disposal of all Los Alamos Nation Laboratory (LANL) legacy TRU waste by 2012. The PMP stipulates that LANL capabilities will be supplemented by additional capacity provided by CBFO during fiscal years 2003-2012. This SOW describes the supplemental services to be provided by CBFO through its Central Characterization Project (CCP).

There are approximately a total of 36,000 containers with contact handled (CH) and 54 containers of remote handled (RH) Transuranic (TRU) waste stored at LANL. This waste must be characterized and certified to meet WIPP requirements. After the waste has been characterized and certified, it will be loaded into special shipping containers and shipped to WIPP for disposal.

The intent of this Statement of Work (SOW) is to ensure that the interfaces between the CCP and LANL TRU Waste Programs are properly managed such that the integrity of the certified program is protected.

1.2 General Description of Services

CCP will develop and provide a program to characterize/analyze and certify LANL transuranic waste. WTS will provide support as required for the TRU waste program. CCP is responsible for the development of AK, characterization/analysis, and certification, through and including data entry into WWIS, per WIPP requirements defined in Section 2.2. These services will be primarily provided at the LANL, in Area G of Technical Area (TA) 54. Specifics of these services are as follows:

- equipment and personnel for the NDA and NDE of TRU waste (A)
- equipment and personnel for HSG sampling and flammable gas analyses (FGA) (B)
- personnel to perform VE, repackaging (RPK), and prohibited item disposition (PID) glovebox operations (C)
- drum venting (D)
- lower flammability limit (LFL) calculations (E)
- coring of waste (F)
- certification of waste
- personnel to ship waste (G)
- offices for CCP personnel (H)
- personnel for support services to augment LANL infrastructure services (e.g., fork truck drivers/radiation control technicians)

Notes:
(A) LANL will provide infrastructure services for NDE and NDA.

(B) LANL will provide thermal conditioning units. Analysis of HSG will be performed for CCP at Idaho National Laboratory (INL).
(C) LANL will provide facilities, equipment, and personnel for VE, RPK, and PID operations.
(D) Retrievably restored drums will require venting.
(E) LFL calculations are required for repackaging of waste at WCRRF.
(F) Coring will be performed for CCP at INL.
(G) LANL will provide facilities, personnel, and equipment for the shipment of TRU waste.
(H) LANL will provide telephone and standard communication services including computer network access.

In coordination with CCP, LANL will develop and maintain a project schedule to manage the activities described in this agreement. The CCP will identify and schedule activities to support completing the agreed upon scheduled shipments of TRU waste from LANL to WIPP. The CCP will provide the necessary management resources to support planning and scheduling, activity status reporting, and oversight of the deliverables described in the SOW by the established completion date. All activities performed by CCP and LANL are dependent upon funding by the DOE. However, this SOW does not identify or commit funding by either the CBFO or Los Alamos Site Office (LASO). For funds provided by LASO, CCP will provide earned value data and variance analysis on a monthly basis.

Both LANL and the CCP are responsible for reporting conditions or concerns that have or may have safety, health, quality assurance, security, operational, or environmental implications in accordance with applicable LANL and CCP procedures. Both LANL and CCP personnel are to immediately "Stop Work" when conditions may be dangerous to themselves, others, the facility, or the environment.

Following approval of this SOW, the CCP will submit a revised Interface Document for review and approval by LANL that will establish the detailed interfaces, including responsibilities for the implementation of TRU waste requirements between the CCP and LANL. The Interface Document will include an organization chart identifying the key positions and reporting relationships responsible for delivering and overseeing defined services, including interfaces with LANL.

Both the CCP and LANL are responsible for ensuring that CCP's personnel performing characterization services are informed of applicable sections of this document and responsibilities outlined in the Interface Document.

1.3 LANL Acceptance of CCP Certification

The CCP will provide certified containers as evidenced by WIPP acceptance of CCP processing data into the WIPP Waste Information System (WWIS). The LANL maintains ownership of the waste. LANL will coordinate and approve the manifesting documents. CCP will provide CCP qualified personnel and procedures and will use LANL personnel

and facilities, including LANL equipment and consumables that are under the LANL QA program. LANL remains the waste generator.

CCP will procure items such as (55gallon drums, Standard Waste Boxes, drum filters, and bags) at LANL's request subject to LANL providing the required funding. Receipt inspections will be conducted as identified in the Interface Document.

2.0 REFERENCES

2.1 Acronyms & Key Definitions

AB	Authorization Basis
AK	Acceptable Knowledge
ALARA	As Low As Reasonably Achievable
BDRs	Batch Data Reports
CBFO	Carlsbad Field Office
CAR	Corrective Action Report
CFR	Code of Federal Regulations
CH	Contact Handled Waste
Ci	Curie
CCP	Central Characterization Project (CCP) Team
DOE	U. S. Department of Energy
ESH&QA	Environmental, Safety, Health & Quality Assurance
EWMO	Environment Waste Management Operations
FGA	Flammable Gas Analysis
HAZWOPER	Hazardous Waste Operation and Emergency Response
HENC	High Efficiency Neutron Counter
HMTR	Hazardous Material Transportation Representative
HSG	Headspace Gas Sampling and Analysis
HSR	Health and Safety Representative
INTERFACE DOCUMENT	An agreement between the CCP and LANL for defining the responsibilities associated with WIPP requirements defined in the reference documents identified in Section 2.2
ISD	Implementation Support Document
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security
LFL	Lower Flammability Limit
LIR	Laboratory Implementation Requirements
LRA	Laboratory Readiness Assessment
MOVER	Mobile Visual Examination and Repackaging facility
MSA	Management Self Assessment
NCR	A deficiency in Project requirements that renders the quality of an item, service, sample, data, or activity unacceptable or indeterminate.
NDA	Non Destructive Assay

NDE	Non Destructive Examination
PID	prohibited item disposition
PMP	Performance Management Plan
QAR	Quality Assurance Representative
QAPD	Quality Assurance Program Document
QAPjP	Quality Assurance Project Plan
PDP	Performance Demonstration Program
PPA	Property Protection Area
RA	Readiness Assessment
RCO	Radiological Control Operations
RCT	Radiological Control Technicians
RH	Remote Handled
RPK	Repackaging
RWP	Radiological Work Permit
SOW	Statement of Work
SPM	Site Project Manager
SPQAO	Site Project Quality Assurance Officer
STR	Site Technical Representative
SWMF	Solid Waste Management Facility
TCO	Transportation Certification Official
TRU isotope	An isotope of any element having an atomic number greater than uranium (i.e., 92)
TRU Waste	Waste containing more than 100 nCi of alpha emitting Transuranic isotopes per gram of waste with half lives >20 years [for payload containers]
USQD	Unreviewed Safety Question Determination
VE	Visual Examination
VPM	Vendor Project Manager, on site and reports to the CCP Project Manager
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan
WCO	Waste Certification Official
WG Pu	Weapons Grade Plutonium has Pu^{239} as the major isotope. Weapons Grade Plutonium also includes other isotopes such as Pu^{238}, Pu^{240}, Pu^{241}, and Am^{241}
WIPP	Waste Isolation Pilot Plant
WIPP Requirements	Requirements contained in references identified in documents contained in Section 2.2
WWIS	WIPP Waste Information System
WTS	Washington TRU Solutions

2.2 Codes, Orders, Acts, and Regulations

The CCP will complete the services required by this SOW in accordance with the following Federal and State codes, orders, acts and regulations. The CCP will use the

latest revision of the reference document unless a request for deviation is submitted to and approved by LANL.

DOE Order 435.1 (7/9/99)	Radioactive Waste Management
DOE Order 5480.4 (Change 4, 1/17/93)	Environmental Protection, Safety and Health Protection Standards
10CFR 830.120	Quality Assurance for DOE Nuclear Facilities
10CFR 830.121	Quality Assurance Program
10CFR 830.122	Quality Assurance Criteria
10CFR 835	Occupational Radiation Protection
10CFR Part 820	Price Anderson Amendments Act of 1988 (PAAA)
10CFR851	Worker Safety Rule
29CFR 1910	Occupational Safety and Health Act
40CFR Parts 261- 264	(Part 261) Identification and listing of Hazardous Wastes (Part 262) Standards Applicable to Generators of Hazardous Wastes (Part 263) Standards Applicable to Transporters of Hazardous Waste (Part 264) Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

The CCP will complete the services required by this statement of work (SOW) in accordance with the following Carlsbad, New. Mexico Waste Isolation Pilot Plant (WIPP) requirements:

Hazardous Waste Facility Permit, Waste Isolation Pilot Plant, EPA No. NM4890139088, Attachment, Waste Analysis Plan (WIPP-WAP).

Carlsbad Field Office Quality Assurance Program Document, DOE/CBFO-94-1012, Carlsbad, New Mexico, Carlsbad Field Office, U.S. Department of Energy.

Contact Handled Waste Acceptance Criteria for the Waste isolation Pilot Plant, DOE/WIPP-02-3122.

CH Packaging Operations for High Wattage Waste at LANL, DOE/WIPP 02-3220

Safety Analysis Report for the TRUPACT II for Packaging (SARP, Appendix 1.3.7, TRUPACT II Methods for Payload Control [TRAMPAC]), Current Version. Nuclear Regulatory Commission.

DOE/CBFO-01-1005, *Performance Demonstration Program Plan for Nondestructive Assay of Drummed Wastes for the TRU Waste Characterization Program.*

DOE/CAO-95-1076, *Performance Demonstration Program Plan for Analysis of Simulated Headspace Gases.*

Safety Analysis Report for the RH-TRU 72-B Waste Shipping Package (APPENDIX 1.3.7 Remote-Handled Transuranic Waste Authorized Methods for Payload Control), Current Version

DOE/WIPP-02-3214, Remote-Handled TRU Waste Characterization Program Implementation Plan

3.0 WORK REQUIREMENTS

3.1 CCP Task Requirements

3.1.1 Facilities and Infrastructure

The CCP will adhere to the requirements defined in LANL's Laboratory Implementation Support Documents (ISDs) and regulatory permits (some of which are referenced in Attachment 5.1)

Other general facility and equipment requirements:
The CCP will provide to LANL the technical specifications and instructions for installation of the mobile characterization units that the CCP will bring on site to perform characterization of TRU waste.

Any proposed changes to approved facilities, equipment, processes, or select procedures for which CCP is responsible must be submitted for review by LANL before implementation. Select procedures are identified in the CCP/LANL Interface Document(s).

Other general requirements for operations:

The CCP and LANL will adhere to good housekeeping practices and ensure that work environments are maintained clean and safe.

The CCP will submit Health and Safety Plan(s), which will be concurred by LANL before use. All work performed at the site will also comply with LANL Health and Safety requirements. CCP personnel will follow LANL occupational safety and radiation protection requirements.

The CCP will be responsible for tracking containers throughout the characterization and certification processes. This will be covered in detail in the Interface Document(s).

Hours in which work is performed will be in accordance with LANL policies and procedures. If work is to be performed outside the standard work hours then prior approval will be obtained by the CCP.

The CCP is responsible for providing project mobilization, startup testing, management assessment and coordinating CBFO audit activities, and other functions related to characterization/ analysis and certification operations. CCP will utilize LANL facilities and equipment for assembly of payloads for shipment of waste to WIPP. These LANL facilities and equipment are under the LANL QA program.

The CCP will perform necessary analyses and reviews to ensure that facilities, equipment, processes, and procedures used by CCP to perform activities related to this agreement comply with the requirements of LANL and with physical safety requirements as specified by LANL operations. The CCP will develop and implement and maintain a conduct of operations program in accordance with DOE requirements. LANL is responsible for ensuring that CCP activities comply with the requirements of LANL safety basis documents through their USQD screening process.

The CCP will be responsible for maintenance and calibration of equipment used at LANL including the maintenance of associated records. LANL will provide required configuration management documentation to CCP to ensure proper use of equipment.

3.1.2 NDA and NDE

The CCP will operate WIPP-certifiable NDA and NDE Equipment, as appropriate, at TA-54, Area G, using qualified personnel. The CCP may utilize the LANL RTR #1 and HENC #2. The CCP may utilize alternate methods as described in the requirements documents listed in section 2.2.

3.1.3 Headspace Gas Sampling/FGA

The CCP will provide supplies (e.g., sampling canisters, gas cylinders) and qualified personnel to perform Headspace Gas sampling and FGA at TA-54, Area G. HSG samples will be shipped by LANL Shipping and Receiving to INL for chemical analysis. CCP will also maintain documentation that the method chosen for measuring and recording temperature meets equilibrium requirements (for Headspace Gas sampling, only).

3.1.4 Glovebox Operations

LANL will disposition/remediate non-conforming and prohibited items; or, will arrange for such activity to be performed in a LANL system such as at TA-50-69, or a Permacon structure at TA-54, Area G.

The CCP will provide qualified personnel to perform Visual Examination, after completion of appropriate site-specific training, and to the LANL facility safety requirements.

3.1.5 Coring

The CCP will be responsible to get homogeneous waste containers cored and analyzed.

3.1.6 Certification

CCP will provide the equipment, materials, and qualified personnel required to achieve certification, and will establish certification procedures for waste characterized by CCP. CCP will generate, review, and maintain required waste certification records.

In the area of AK, the CCP will provide a team of AK specialists to research and assemble an AK summary report and to perform reevaluations of AK throughout the certification process. CCP will also develop, and obtain CBFO approval of waste stream profile forms for wastes characterized by CCP, and will submit the Waste Stream Profile Packages to the TRU Waste Disposition Project Director for concurrence.

LANL will specify notification requirements for characterization activities to ensure compliance with LANL Authorization Basis.

In the area of Batch Data Reports (BDRs), CCP will prepare and validate BDRs in accordance with CCP procedures, the WAP, and the WAC. CCP will perform data generation level and project level validation and verification, and will provide access to the Batch Data Reports for characterization activities to the TRU Waste Disposition Project Director. The CCP will maintain a document control system program that includes controlled operating procedures for equipment and systems, and data management, and QA records storage and maintenance. Document archiving will be the responsibility of CCP.

The CCP will develop the final certification data, and submit this certification data to CBFO by entering it into the WIPP Waste Information System.

3.1.7 Shipments to WIPP

CCP will provide CCP-qualified Transportation Certification Officials (TCO's) to perform the Transportation Certification function for shipment destined to WIPP and/or other testing facilities. The TCO will review the manifesting documents. The TCO will arrange for and oversee the necessary Loading and Leak Testing of the shipping container.

3.2 LANL-Furnished Materials, Equipment, or Services (Subject to receipt of DOE funding)

3.2.1 Facilities and Infrastructure

General facility and equipment requirements:

LANL will place the CCP's mobile equipment trailers and office/administrative trailers into mutually acceptable location on the LANL site. This location will be paved, with a

grade of no more than 2%. LANL site personnel will move and offload equipment, as necessary, from the transport trailer upon arrival at LANL. This work area will supply sufficient area for the CCP's characterization trailer and equipment/parts lay down.

LANL will supply the electrical power and the primary connection to the power source, and provide electrical grounding for all CCP facilities. Where feasible, LANL will provide voice and data communication lines to all of the CCP facilities.
Any proposed changes to approved LANL facilities, equipment, processes, or procedures for which CCP is responsible must be submitted to CCP for review before implementation. Conversely, any CCP proposed changes to approved facilities, equipment, processes or procedures for which LANL is responsible, must be submitted to LANL for review before implementation. Agreement between LANL and the CCP must be reached before any changes are approved and implemented to ensure operations are not impacted. The "CCP/Los Alamos National Laboratory (LANL) Interface Document" (Interface Document) will describe how LANL-CCP agreements are documented.

Facility and Operations Safety Requirements:

LANL will provide general management safety oversight responsibility for the project addressed in this SOW. Accordingly, LANL shall conduct self assessments, safety walk downs, drills, work reviews/inspections, or other such oversight activities as are deemed appropriate to ensure that project functions are managed safely and effectively and that deliverable schedules are being properly managed. The TRU Waste Disposition Project Director will provide oversight of work performed by the CCP.

LANL will provide manufacturers' information to CCP on all LANL-owned equipment to verify configuration management and ensure control is maintained.

LANL will provide general LANL-required and TA-54 site-specific training for CCP personnel, and will provide documentation of the training to the CCP.

In the area of personnel safety, LANL will provide personnel protective equipment (e.g., respirators, safety glasses, lab coats) for visual examination, headspace gas, NDA, RH retrieval, transportation, and NDE operations. LANL will also provide radiation dosimetry/badges, internal dosimetry (bioassay) and supporting services, occupational health monitoring and will provide records of all external and internal dosimetry results and personnel exposure monitoring for all monitored CCP personnel.

LANL will provide RCT and IH&S coverage to support container handling, characterization, and CCP equipment maintenance activities. LANL will provide RCT and IH&S support under the auspices of the LANL RCO program as required to support safe operations. LANL provides signs, barricade rope, warning tags, posting materials, and supporting services. LANL will also provide all required airborne contamination and area radiation monitoring equipment, analysis and records.

LANL will provide the following emergency services:

- Emergency First Aid Assistance
- Emergency Address System
- Evacuation Warning and Area Emergency Shelter
- Response to Emergencies (i.e., fires, medical emergencies, etc.)
- Final disposition of cleanup material from spills and the resultant written reports.

Other general facility and equipment requirements:
LANL will:

Provide a receiving location for CCP ordered materials and supplies shipped to LANL. Provide support for secondary waste packaging and disposal.

Provide transportation of TRU waste from the staging/storage areas to the CCP's equipment, and will provide loading of the containers into the CCP's equipment. CCP will provide transportation support under the auspices of the LANL program as required to support safe operations.

Generate work control packages to support the setup, testing, maintenance and operation of CCP equipment at LANL.

3.2.2 NDA and NDE

LANL will provide for the control and storage of radioactive sources used in the Performance Demonstration Program (PDP) for NDA and for calibration of NDA equipment in accordance with LANL requirements. LANL will move containers to and from NDA and NDE equipment, and will provide RCT coverage for NDA and NDE operations.

3.2.3 Headspace Gas Sampling/FGA

LANL will move containers to and from the Dome 33 and 491 sampling rooms, and will provide RCT coverage for HSG sampling operations. LANL will provide support and facilities for gas sampling and analyses. LANL will provide for shipment of the summa gas canisters to INL for CCP.

3.2.4 Glovebox Operations

LANL will provide appropriate site-specific training to allow qualified CCP staff to document work for Visual Examination or Repackaging (in compliance with CCP Certified Program). LANL will provide facilities, such as a Permacon structure at TA-54, Area G or TA-50-69 (the WCRRF) for Visual Examination or for the remediation of prohibited items encountered in TRU waste.

3.2.5 Coring

LANL will provide support for shipping of the drums to and from INL

3.2.6 Shipments to WIPP

LANL will perform as the shipper of record. LANL will develop and approve the necessary manifesting documents. LANL will provide CCP personnel with the required site specific and facility specific training to allow CCP personnel to work in the appropriate LANL facilities. LANL will provide staff to perform waste container handling activities, loading and leak testing activities. LANL will provide the necessary crane operators and qualified RCT personnel for Transportation activities, as well as calibrated radiological control equipment. LANL will manage the facilities, including the maintenance of all Transportation-related equipment: facilities forklifts, cranes, loading docks, etc.

LANL will manage and transport the selected waste container from the storage facilities to the appropriate loading facilities. LANL will ensure that the correct waste containers are loaded into the shipping containers and that the shipping containers are appropriately configured.

3.2.7 RH TRU

LANL will provide appropriate RH expertise to assist the CCP development of an RH Characterization/Certification Program.

3.3 Quality Requirements

The CCP will implement a Quality Assurance Project Plan (QAPjP) in accordance with the Hazardous Waste Facility Permit issued to Waste Isolation Pilot. Plant (WIPP WAP), EPA No. NM4890139088.

The CCP will implement a Waste Certification Plan to establish the criteria for the CCP activities supporting certification of TRU waste. The Waste Certification Plan will describe the activities and specific documents that implement and verify compliance with the requirements.

The CCP will develop procedures that implement the CCP's QAPjP and Waste Certification Plan.

The CCP's QAPjP and Waste Certification Plan will be submitted to LANL for information.

The CCP will be required to support and pass the CBFO audit (initial and re-certifications) of its TRU waste characterization/analysis and certification program at LANL. The CCP will resolve Corrective Action Reports (CARs) resulting from the CBFO audit and receive notification from CBFO that its characterization program has been certified. A copy of notification of CCP certification will be provided for LANL,

records. Continuous certification of all characterization activities must be maintained for the duration of the work. The CCP will be responsible for any rework associated with their operations.

For the reporting of nonconforming items, the CCP will implement: a nonconformance reporting program and procedures that are responsive to the DOE CBFO Quality Assurance Program Document, CBFO-94-1012. The process is defined in the Interface Document and CCP procedures.

The CCP will disposition each container as WIPP certifiable or non certifiable upon completion of each characterization process. If the container does not match the waste stream description produced by the Acceptable Knowledge (AK) characterization or WAP requirements, a nonconformance report (NCR) will be issued in accordance with the CCP's Nonconformance Item Reporting and Control program. A copy will be provided to LANL for information.

3.4 Period of Performance

Deploy:	September 2003
Start up:	March 2004
Operational:	March 2004
Initial Certification Audit:	April 2004
Recertfication Audit:	Annually in April/May
Completion:	September 2012

3.5 Personnel Qualifications/Certification

The CCP is responsible for developing, implementing, and maintaining technical training that satisfy certification requirements:

For waste characterization and certification activities, CCP must maintain a technical training program that satisfies the requirements identified in WIPP CCP and CBFO Procedures. CCP personnel responsible for delivering NDE, NDA, Visual Examination, Headspace Gas Sampling/FGA or other WIPP technical services must complete the applicable training and qualification requirements prior to being assigned to perform independent work.

CCP personnel designated to perform work at LANL must also complete all general LANL-required and TA 54 site-specific training.

If LANL personnel are performing activities under CCP certification, they must be qualified to the CCP Certified Program.

Finally, CCP is responsible for ensuring that staff working in the Loading activities are qualified under the CCP QA program. CCP is responsible for ensuring that CCP staff

working in glovebox operations meet the training and qualifications required by LANL for these operations.

3.6 Deliverables

3.6.1 The CCP is responsible for delivering the following services and documents to the TRU Waste Disposition Project Director as part of this SOW:

- Interface Document(s)
- Characterization and certification of TRU waste for shipment to WIPP each 12 months
- Correspondence indicating NMED and EPA approval of the CFBO certification audit report
- Approved Waste Stream Profile Packages
- DOE/CBFO - approved Programmatic Documents (e.g., QAPjP)
- Documented evidence of participating in and passing the CBFO Performance Demonstration Program for each operational system providing NDA and HSG Analysis in accordance with the latest version of the WIPP PDP Plans
- AK Summary Reports
- Non Conformance Reports and Corrective Action Reports, including disposition (as needed)
- Batch Data Packages

3.6.2 The following CCP documents require review (and re-review upon change) by the TRU Waste Disposition Project Director.

- Waste Stream Profile Packages
- AK Summary Report
- Operating Procedures (Procedures which directly affect the LANL AB.)
- Non-Conformance Reports and Corrective Action Reports and their resultant disposition (as needed)

Notification of review by LANL can be by letter, memo, e-mail, or input into the WTS electronic system from the TRU Waste Disposition Project Director to WTS management. The TRU Waste Disposition Project Director will ensure changes to procedures have been processed through the Host Facility for radiation and industrial safety and authorization basis reviews.

3.7 Exceptions

Any exception or clarification to any requirement identified in this SOW must be identified in the Interface Document(s).

After the approval of the Interface Document(s) by CCP and LANL, CCP will request deviations or propose changes to the requirements in this SOW through the TRU Waste Disposition Project Director, who will coordinate with LASO. Following LASO

concurrence, the TRU Waste Disposition Project Director will submit the change(s) to the LANL WIPP Program Manager in writing, who is responsible for coordinating approval by the appropriate LANL Division Management. All activities performed by CCP or LANL are dependent upon funding by the DOE. However, this SOW does not identify or commit funding by either the CBFO or LASO.

The CCP will submit a separate report, as applicable, for each deviation/clarification that will:

- Identify the specification and revision number,
- Identify (by section and subsection number) the criteria that cannot be met,
- Summarize the reason for the deviation,
- Present a proposal for resolution

The CCP will submit the report(s) to the LANL TRU Waste Disposition Project Director:

4.0 ACCEPTANCE OF SERVICES

4.1 Final Acceptance Methods

4.1.1 LANL and CCP review and concurrence of the Interface Document(s)
4.1.2 NMED and EPA approval of CBFO Certification Audit Report
4.1.3 LANL review and concurrence of Waste Stream Profile Packages
4.1.4 CCP successful entry of data into the WWIS
4.1.5 LANL or CCP successful assembly of payloads and shipment certification

4.2 Other Requirements

CCP will:

- Successfully complete PDPs for NDA, and Headspace Gas Analysis
- Provide results of external and internal QA audits and, assessments to LANL
- Provide copies of NCR's and CAR's and their resultant disposition to LANL as needed

5.0 ATTACHMENTS

5.1 LANL Procedures

Attachment 5.1
LANL Technical Procedures

Access to the following procedures will be made available via the LANL web page.

- Safe Work Practices, IMP 300
- Nuclear Facility Safety Authorization Basis, IMP 112
- Startup/Restart of Laboratory Facilities/Activities, P 115
- Stop Work and Restart, IMP 141
- Cryogenic Fluids or Cryogens, IMP 141
- Lockout/Tagout for Personal Safety, ISD 101-3
- Locking and Tagging equipment, Machinery and Systems, ISD 101-3
- Personal Protective Equipment, ISD 101-6
- Cranes, Hoists, Lifting Devices, and Rigging Equipment, ISD 101-25
- Pressure, Vacuum and Cryogenic Systems LANL Emergency Management, LIR 402-1200-01.1
- General Waste Management Requirements, LIR 404-00-02.4 Hazardous and Mixed waste Requirements, LIR 404-00-03.1
- Managing Radioactive Waste, LIR 404-00-05.4
- Packaging and Transportation, IPP 525.2
- General Security, LIR 406-00-01.1
- Nuclear Safeguards, ISD 201-5
- Abnormal Events, ISD 322-3
- Hazardous Waste Operations and Emergency Response Training Requirements, LIR 402-100-02.2
- LANL Fire Protection Program, PD 1220
- Occupational Radiation Protection Requirements, ISD 121-1
- Facility Management Program, ISD 312-2
- Occupational Radiation Protection Guidance, ISD 121-1
- Cancelled and not replaced
- Hazard Analysis and Control for Facility Work, IMP 300
- Chemical Management ISD 101-4.0

This list is not all inclusive and other documents will be provided such as the Host Facility Safety Plan.

General Waste Management Requirements

Los Alamos National Laboratory
Laboratory Implementation Requirement LIR 404-00-02.4
Issued: 11/01/98
Revised: 03/29/07

Mandatory Document

1.0 INTRODUCTION

LESSONS LEARNED

NOTE: Lessons Learned *may apply* to the requirements contained in this LIR.

1.1 OVERVIEW

The institutional requirements for waste management at the Laboratory are found in a series of required documents written for specific waste management procedures, and located in the waste services website. This document does not stand alone as a primary waste management document; and contains the general non-waste-specific requirements that must apply to all waste types. The documents with requirements for waste types, such as radioactive, solid, hazardous and mixed, and polychlorinated biphenyl (PCB) types of waste are e located on the Waste Services (WS) website for data, publications and reports. See Appendix A for a reference chart of the waste management LIRs. The requirements contained in this LIR must be followed to implement the waste portion of LPR 404-00-00, *Environmental Protection* and will be effective upon the date of issue.

This LIR complements the expectations contained in LPR 404-00-00 **Attachment E (Guidance)** ***for Recommended Major Implementation Criteria for Self-Assessment.***

1.2 IN THIS DOCUMENT

Section	Title
1.0	Introduction
1.1	Overview
1.2	In This Document
2.0	Purpose
3.0	Scope and Applicability
4.0	Precautions and Limitations
5.0	Implementation Requirements
5.1	Division Directors, Program Managers, and Program Directors
5.2	Waste Management Coordinators
5.2.1	General
5.2.2	Training
5.3	Treatment, Storage, and Disposal Facilities

1.2 IN THIS DOCUMENT (CONT.)

5.4	Generators
5.4.1	General
5.4.2	Waste Forecasting
5.4.3	Waste Minimization
5.4.4	Waste Characterization
5.4.5	Waste Transfer and Receipt–General
5.4.6	Waste Transfer and Receipt–Wastewater
5.4.7	Nonconformance Reports
5.4.8	Quality Assurance Requirements
5.4.9	Training
5.4.10	Waste with No Disposal Path
5.5	Generator Support
5.5.1	Waste Services, WS
5.5.2	Environmental Waste Management Operations Radioactive Liquid Waste (EWMO-RLW)
5.5.3	Hazardous & Mixed Waste Operations, WS-HMWO
5.5.4	Water Quality and Hydrology (ENV-WQH)
5.5.5	Waste Acceptance, WS-WA
5.5.6	Institutional Training Services, CT-ITS
5.5.7	Earth and Environmental Sciences (EES) Associate Directorate Environmental Programs - Waste Services (ADEP-WS)
5.5.8	Maintenance Site Services, Utilities and Infrastructure (MSS-UI)
5.5.9	Waste Management Policies and Procedures Committee (WMPCC)
5.6	WMC Program
5.6.1	WMC Program Administrator
5.6.2	WMC Inter-divisional Team
5.6.3	WMC Staffing Options
6.0	Exceptions and Exemptions
7.0	Records
8.0	History

2.0 PURPOSE

GUIDANCE NOTE: This document refers to other LIRs and Laboratory Implementation Guidance (LIG) documents that contain additional requirements and information for specific waste types.

This document must be implemented to manage waste and aid in meeting the requirements of Department of Energy (DOE) Orders, federal and state regulations, and Laboratory permits; and describes the institutional waste management requirements that must apply to all waste types, from the planning and design of waste generation, through the final disposal or permanent storage of wastes.

3.0 SCOPE & APPLICABILITY

GUIDANCE NOTE: This document does not contain technical requirements concerning waste form, content, packaging, or handling; that information is contained in PLAN-WASTEMGMT-002, *LANL Waste Acceptance Criteria*. This document does not address all conceivable situations. Contact the responsible waste management organization regarding any unusual situations, any suggestions for changes in the requirements or disputes over their interpretation, or for possible exceptions to the requirements found in this document. See Appendix B for a contact list.

The requirements contained in this document must apply to all Laboratory individual waste generators, their Safety and Environment Responsible line-management chain, and all organizations that handle, treat, store, dispose of, transport Laboratory waste, or receive waste from off-site.

This document must apply to all Resource Conservation and Recovery Act- (RCRA) regulated waste, Toxic Substances Control Act- (TSCA) regulated waste, low-level radioactive waste (LLW), mixed low-level waste (MLLW), transuranic (TRU) waste, wastes destined for or generated from wastewater treatment operations, administratively controlled, medical, solid waste, or other waste generated by the Laboratory and treated, stored, or disposed of by the Laboratory.

This document's requirements must apply equally to classified and unclassified waste.

This document must not apply to excess government property. Personnel wishing to excess government property should consult the Property Manual.

For the purposes of this document, "TSDF" (treatment, storage, and disposal facility) must refer to:

- Any state or federally permitted waste facility,
- Any facility covered under DOE Order 435.1, and
- National Pollutant Discharge Elimination System (NPDES) facilities permitted as 13S (Sanitary Wastewater Treatment), 05A055 (High Explosive Wastewater Treatment Facility), 051 (Industrial Waste Treatment Plant Discharge).

Specific examples are:

- TA-50, MSS-EWMFO, Environmental & Waste Mgmt Facility Ops
- TA-50, Hazardous & Mixed Waste Operations, WS-HMWO
- TA-54, Areas G, J, and L- Facility Waste Services, WS-FWS
- TA-46, MCFOD Material & Chemistry Facility Operations Directory
- TA-16, Engineering Sciences & Applications

4.0 PRECAUTIONS AND LIMITATIONS

GUIDANCE NOTE: Treatment, storage, or disposal of some waste or combinations of waste, is not allowed under existing Laboratory permits. Contact the appropriate Environment, Safety, Health & Quality Directorate (ESH&Q) (see Appendix B for guidance).

GUIDANCE NOTE: Failure to meet the requirements in this document could cause the Laboratory to incur penalties and fines due to noncompliance. Willful violation can result in criminal penaltics for responsible personnel.

This document must not relieve the Laboratory or its workers from their obligation to comply with all provisions of existing permits or permit applications, compliance orders, schedules, consent agreements, or other enforceable requirements relevant to Laboratory waste.

Waste generator organizations mis-characterizing waste must be charged for any remediation work required to bring the waste, the site, and/or the facility into compliance with governing regulations.

For any work that could generate waste and excess materials, before work is performed the owning organization must identify the responsible person or organization who will manage the waste and excess materials.

Waste with no disposal path must not be generated without prior approval from DOE. For unplanned generation of waste with no disposal path, the generator of the waste must contact the Associate Laboratory Director for Nuclear Weapons – Associate Director for Nuclear Weapons – Materials and Manufacturing (ADSMS) immediately to start the approval process. See Section 5.4.10 of this document for additional information.

5.0 IMPLEMENTATION REQUIREMENTS

5.1 DIVISION DIRECTORS, PROGRAM MANAGERS, AND PROGRAM DIRECTORS

Division Directors, Program Managers, and Program Directors must:

- Ensure individual waste generators recognize and manage waste in accordance with state and federal regulations and Laboratory requirements.
- Provide waste management support to the waste generators in their facilities by one or a combination of the staffing options listed in Section 5.6.3 of this LIR.
- Support the waste generator and the Waste Management Coordinator (WMC) in implementing proper waste management procedures.
- Manage wastes at their facilities (not associated with the Environmental Restoration [ER] program) including any waste streams for which the generator is unknown or process knowledge is unavailable.
- If the organization is a member of the Waste Management Policy and Procedure Committee (WMPPC), appoint representatives to the WMPPC.
- Ensure designated subordinate managers maintain a waste management program at their facility that meets Laboratory and regulatory requirements.
- Support the authority of the WMC to recommend and implement requirements and changes that affect waste-generating and waste management processes and operations in the facilities in which the WMC is employed.
- Delegate waste management responsibilities in writing.
- Ensure that generators characterize wastes in accordance with treatment, storage, and disposal facility (TSDF) requirements.

5.2 WASTE MANAGEMENT COORDINATORS (WMC)

5.2.1. General

WMCs must:

- Serve as the primary point of contact on waste-related issues.
- Provide generators with guidance and assistance in ensuring regulatory compliance.
- Assist generators in determining whether a waste has a path forward to disposal.
- Represent waste-generating organizations during audits and assessments.
- Ensure actions are initiated to eliminate non-compliances.
- Demonstrate knowledge of the waste-generating activities within the waste-generating organization and the waste disposal process.
- Ensure inspections of less than 90-day storage areas are performed as needed or at a minimum, weekly.
- Provide the waste-generating organization with assistance in implementing waste minimization/pollution prevention techniques.
- Assist waste generators with completing waste documentation.
- Prepare, sign, and submit waste documentation to Waste Services (WS).
- Coordinate waste transportation from their facility.
- Ensure required transportation paperwork is signed for waste shipments.
- Maintain an auditable file of waste management documentation.
- Assist in preparing and reviewing waste management sections of hazard control plans (HCPs), waste minimization plans, management plans, and project documentation.
- Attend required training including quarterly WMC meetings.
- Be responsible for disseminating waste management information to the generators in their facility.
- Notify appropriate personnel of any spills, releases, leaks, or discharges.

Training

General Training

Managers are responsible for specifying any job-, facility- and/or operation-specific training needed by the Waste Management Coordinator (WMC). WMCs are required to maintain Waste Management Coordinator Training through the Laboratory-wide Institutional Training Services, CT-ITS or CT-ESH to be qualified as a WMC, and the qualifications must be documented in the Employee Development System (EDS).

Waste Requirements Documents

WMC-Specific Training

Within six months of appointment to the position, WMCs (part- and full-time) must complete the following (or equivalent) training:

- Waste Generation Overview (course #8477).
- Waste Documention Forms (course #8504)
- Waste Management Coordinator Requirements (course #9604)
- One or more Hazardous Materials Packaging and Transportation (HMPT) training plans, as required by job-specific responsibilities:
  - HMPT Shipper: Hazmat/Waste (training plan #68)
  - HMPT Shipper: RAM I (training plan #1448)
  - HMPT Shipper: RAM II (training plan #84)
  - HMPT Shipper: Hazmat/RAM/Waste (training plan #1471)
- The WMC Quarterly Meetings are required for WMCs as ongoing training in issues important to performing the duties of a WMC.

GUIDANCE NOTE: Failure to maintain training, including attendance at quarterly meetings, may result in disqualification as a WMC.

GUIDANCE NOTE: It is strongly encouraged that WMCs have training in the chemistry of hazardous and/or radioactive materials and college-level mathematics.

5.3 TREATMENT, STORAGE, AND DISPOSAL FACILITIES (TSDFS)

TSDFs must:

- Ensure their operations meet permit, regulation, and relevant DOE order requirements.
- Provide guidance to waste management personnel, waste management coordinators (WMCs), and generators regarding completion of waste characterization documentation and acceptance criteria requirements.
- Maintain the documentation and data required by permits and regulations.
- Review waste characterization documentation and authorize waste transfers.
- Reject or order remediation of waste that is not packaged or characterized in accordance with the acceptance criteria or otherwise violates Laboratory or regulatory requirements.
- If requesting waste forecasting information, provide division directors or designees 30 days to transmit the requested information.

- Develop acceptance criteria that explicitly define requirements for and restrictions on characterization, waste form, content, packaging, and handling and provisions for exemptions/exceptions.
  - Acceptance criteria must be based on state and federal law, permits, operational safety, and the TSDF's basis documents that may include a TSDF checklist, Performance Assessment (PA) or Safety Analysis Report (SAR).
  - Acceptance criteria must be reviewed whenever changes are made to permits, regulations, or authorization basis documents that affect the acceptance criteria or should be included in the acceptance criteria.

GUIDANCE NOTE: Acceptance criteria for most LANL TSDFs are presented in a single document, PLAN-WASTEMGMT-002, *LANL Waste Acceptance Criteria.*

- Demonstrate implementation of the acceptance criteria by reviewing waste documentation and inspecting waste containers upon arrival at the TSDF.
- Establish a verification program. The level of documentation and formality must be determined by the TSDF with due consideration to the TSDF's operating basis

GUIDANCE NOTE: A TSDF's operating basis may include permits, safety analysis reports, or programs required by DOE Orders.

- Develop and implement a non-conformance program.
- Be authorized for waste acceptance to accept the waste shipment, sample and analyze, and remediate the waste at the expense of the generator, if during the receipt (including transfer through Radioactive Liquid Waste (RLW) pipelines), inspection, or verification process, a discrepancy is found.

5.4 GENERATORS

5.4.1 General

Waste generators must:

- Ensure the waste generated has a disposal path or is authorized to be generated in accordance with Section 5.4.10 of this LIR.

GUIDANCE NOTE: WMCs or the CT-ESH-Sponsored Courses For The Subject Waste Management can be consulted to determine if waste has a disposal path.

- Segregate waste streams in accordance with the treatment, storage, and disposal facility (TSDF) acceptance criteria and Section 5.4.3 of this LIR.
- Managment of waste in accordance with regulations and requirements applicable to their waste and maintain records in accordance with Section 7.0 of this LIR.
- Minimize waste in accordance with Section 5.4.3 of this LIR.
- Provide accurate and complete waste characterization information as required by the TSDF's acceptance criteria, ensuring that regulated constituents in waste streams are identified.
- Ensure waste is packaged, marked, labeled, and managed in accordance with regulations applicable to their waste and receiving facility(s) acceptance criteria.
- Implement the acceptance criteria requirements of the receiving facility or facilities.
- Notify the Facility Operations Director (FOD), (or designees) of a release of waste or wastewater to the environment or of an accidental discharge to a wastewater treatment facility. The FOD, (or designee) is responsible for notifying the responsible Water Quality & RCRA, ENV-RCRA/ES&H organization (See Appendix B) and, if required, the responsible wastewater treatment organization.
- If the Facility Manager or designee cannot be contacted concerning a release of wastewater as described above, notify Emergency Response (ER).
- Certify waste in accordance with the requirements of the receiving facility or facilities.

ENV-WQH and the affected wastewater treatment organization must be notified as soon as possible, in the planning stage, of any project which is likely to include a new connection to a wastewater collections system (including holding tanks and septic systems.

5.4.2 Waste Forecasting

The generator of waste must provide volume projections to each treatment, storage, and disposal facility (TSDF) (for the waste applicable to that TSDF) upon request.

GUIDANCE NOTE: Any waste generator failing to provide the requested waste forecasting information in a timely manner may be prohibited from transferring waste to the applicable TSDF.

GUIDANCE NOTE: DOE waste forecasts are required for use in the Integrated Database and the Baseline Environmental Management Report.

5.4.3 Waste Minimization and Recycling

GUIDANCE NOTE: Reducing, reusing, or recycling of hazardous waste may constitute treatment under the Resource Conservation and Recovery Act (RCRA). Similar restrictions may exist under other environmental regulations, and the ENV-RCA provides additional guidance, along with the Earth and Environmental Sciences (EES) Associate Directorate Environmental Programs - Waste Services (ADEP-WS) and Environmental Stewardship Office (E-ESO), Waste Services (WS), and Hazardous & Mixed Waste Operations, (WS-HMWO), in waste minimization and recycling procedures.

Waste generation at the Laboratory must be reduced in volume by as much as is technically and economically feasible. To meet this objective:

1. Waste-minimization practices of material substitution, source reduction, treatment, good housekeeping, hazard segregation, and recycling and reuse must be incorporated into waste-generating activities.
2. Disposal must be used only when other options are not technically or economically feasible or safe.

3. Waste minimization practices must be incorporated into facility/site specific certification programs and operating procedures.

EXAMPLES:

A. Maximize the packing efficiency of waste containers.

B. Decontaminate.

C. Reduce waste at the source.

D. Perform hazard segregation at the point of generation. For example, prevent the entry into any one waste stream of any combination of radioactive, non-radioactive, and hazardous wastes.

E. Recycle or reuse material whenever technically or economically feasible.

4. Waste must be recycled or salvaged in accordance with Laboratory requirements specified in the Property Management Manual.

GUIDANCE NOTE: The following materials and items are prime candidates for recycling:

- elemental mercury,
- precious and strategic metals,
- compressed gas cylinders,
- lead-acid and gel cell batteries,
- lead and lead bricks,
- solvents,
- unused laboratory chemicals,
- scrap metal and solder waste,
- uncontaminated soil (soil to which no hazardous or radioactive constituents have been added),
- used oil from various sources, and
- empty drums.

GUIDANCE NOTE: Contact wastenot@lanl.gov for information on recyclables and salvageable materials

5.4.4 Waste Characterization

GUIDANCE NOTE: Application of acceptable knowledge (AK) that meets the regulatory requirement is described LIG 404-00-02, *Acceptable Knowledge*. Note: The WPF by itself is usually not adequate documentation for AK.

- Waste must be characterized by using sampling and analysis, AK, or a combination of the two methods.
- Residues from experiments with hazardous wastes (e.g., treatability studies) must be characterized.
- If AK is used to characterize waste, then the AK must be documented.
- When sampling is used, the samples must be representative of the waste and must provide confidence that the results describe the entire waste stream.
- The characterization method must be defined for the type of waste and be in accordance with the receiving facilities' acceptance criteria.
- Each individual waste generators must complete WPFs to document the characterization of each waste stream or must otherwise comply with the receiving facilities' required documentation. This requirement must also apply to waste that will be shipped off-site directly from the waste generator's facility. Classified waste must NOT be exempt from this requirement.
- Individual waste generators and organizations must transfer only waste that is authorized by the receiving facility.
- WPFs must be required for all wastewater transferred through pipelines to the Radioactive Liquid Waste (RLW) pipelines) and Sanitary Waste System (SWS)—except sanitary wastewater—unless characterization is requested by the receiving facility.
- Generating organizations must review their waste characterization documentation annually or when their waste streams change, whichever comes first, to ensure that the waste characterization is correct.

5.4.5 Waste Transfer and Receipt – General

GUIDANCE NOTE: Department of Transportation (DOT) regulations apply to the transport on public-access roads of material that meets the DOT definition of a hazardous material. Contact the Laboratory Packaging and Transportation Group or refer to LIR 405-10-01, *Packaging and Transportation*.

- Chemical Waste Disposal Requests (CWDRs), Transuranic Waste Storage Records (TWSRs), or other treatment, storage, and disposal facility – (TSDF-) specific forms must be completed for requesting transfers of waste from the generator site to a TSDF except when the waste goes through a pipeline to the EWMO-RLW Environmental Waste Management Operations, Radioactive Liquid Waste or Sanitary Waste System (SWS).
- Individual waste generators and/or organizations must ensure that the packaging and transportation of waste meets the receiving TSDF's acceptance criteria and the requirements of (LIR 405-10-01, which is to be updated, and as seen in the document crosswalk)
- Waste must be transported to the TSDF in any one of the following manners:
  - By the TSDF for the waste generator organization
  - By the waste generator organization, if approved by the receiving facility
  - By the Laboratory support services subcontractor at the request of the waste generator organization
  - By the Laboratory Packaging and Transportation Section at the request of the waste generator organization
- Shipments must be scheduled with the receiving TSDF in accordance with the TSDF acceptance criteria.

5.4.6 Waste Transfer and Receipt -Wastewater

GUIDANCE NOTE: Generating sites are connected to the EWMO-RLW by the Radioactive Liquid Waste Collection System (RLWCS) and/or to the SWS by the Sanitary Waste System Collection System (SWCS). Questions concerning the SWS may be forwarded to the Water Quality Control Group (see Appendix B).

- Generators sending containerized liquid waste to the EWMO-RLW or the SWS must be responsible for the disposition of their empty containers.
- Each Facility Manager must be responsible for maintaining structures, systems, and components connected to the EWMO-RLW or SWS within their boundaries, including components and configurations required by the EWMO-RLW or the SWCS for system design, monitoring, and control.

- EWMO-RLW or SWS ownership of structures, systems, and components connected to the EWMO-RLW/SWS must begin at the Facility Management Unit (FMU) boundary or at the first manhole, whichever is closer to the connecting building.
- Sinks, drains, and pipelines leading to a wastewater treatment collection system must be posted and labeled in accordance with the acceptance criteria.
- Changes in waste steams (such as flow rate increases or changes in constituents) must be evaluated to determine if a new WPF is needed.

GUIDANCE NOTE: EWMO-RLW and SWS provide typical specifications and drawings for the pipelines, manholes, and electronics related to their facility. ENV-WQH provides National Pollution Discharge Elimination System (NPDES) permit requirements.

- Organizations must not alter the route of waste to a wastewater treatment facility without prior approval from the affected wastewater treatment organization and ENV-WQH.

5.4.7 Nonconformance Reports

GUIDANCE NOTE: **Repeat violations may result in the generator being permanently banned from using a treatment, storage, and disposal facility (TSDF).**

GUIDANCE NOTE: Nonconformance reports may be generated by the TSDF if waste fails to meet the requirements of the acceptance criteria.

- Generators must respond to nonconformance reports and initiate corrective actions.
- **The TSDF must refuse or accept, at its discretion, the nonconforming waste or any further waste from the generator until corrective actions have been implemented.**

- Costs associated with remediation actions must be borne by the generator or transporter.

GUIDANCE NOTE: The TSDF's waste certification and acceptance personnel and the waste generator's management are notified of any nonconformance.

- Examples of nonconformances:
  - Improperly characterized waste
  - Improperly completed or missing forms
  - Improperly segregated waste
  - Improperly packaged waste
  - Failure to schedule a transfer prior to its arrival at the TSDF
  - Improperly labeled waste
  - Failure to meet the acceptance criteria

5.4.8 Quality Assurance Requirements

Administrative programs and controls must be in place for waste generating organizations to ensure that quality assurance (QA) requirements are identified and implemented for waste management activities that are commensurate with risk.

5.4.9 Training

GUIDANCE NOTE: The Division Designated Training Generalist or the CT- ESH Training Group is available to provide assistance in determining specific training requirements.

All persons who generate, package, certify, prepare data, perform related radiation surveys, or perform the associated quality functions must receive training in the requirements and implementing procedures for those parts of the waste management program in which they are involved. Personnel training must be conducted in accordance with relevant state and federal regulatory requirements, the Laboratory hazardous waste permit, and Laboratory requirements.

At a minimum, generators must have completed Waste Generation Overview (Course #8477) before any WPFs will be accepted by Waste Services (WS). In addition, generators must complete an update to Waste Generation Overview within one year of the issuance of this LIR and every three years thereafter.

GUIDANCE NOTE: CT-ITS may provide equivalency to Waste Generation Overview Refresher for facility-specific waste generation training.

5.4.10 Waste with No Disposal Path

GUIDANCE NOTE: For additional information, contact nopath@lanl.gov.

- Once a waste generator has identified that a waste has no disposal path, he or she must work with the Associate Director for Nuclear Weapons Materials and Manufacturing (ADSMS)– Associate Director Stock Pile Manufacturing and Support, (ADSMS)
- The generator must submit an approval request package to the ALDNW-MM Office, who must assist in finalizing the approval request package and in coordinating the approval with the DOE. 7
- The ALDNW-MM Office must provide a formal letter with the approval request package and transmit it to the DOE Area Office, to the Waste Management Division at DOE/AL, and to the DOE Program Office points of contact.
- The waste generator must provide an annual report for transmittal to DOE by October 1 of each year, included with the annual renewal request, documenting steps taken to manage and find disposition for any waste without a disposal path that has been previously approved by the DOE.
- The ALDNW-MM Office must transmit the annual report and the annual renewal request to the DOE Area Office Manager and to Waste Management Division at DOE/AL.
- The DOE approval to generate waste without a disposal path is only good for the current fiscal year. *The approval must be renewed at the beginning of each fiscal year the process continues.*

5.5 GENERATOR SUPPORT

5.5.1 Waste Services (WS)

WS must:

- Oversee operations related to the management of hazardous, chemical, mixed, radioactive, and other regulated waste.
- Review and approve waste documentation such as the WPF, CWDR, and TWSR.
- Provide guidance on the LANL WAC.
- Provide guidance on waste characterization, acceptance, certification, minimization, storage, segregation, packaging and transportation.
- Audit off-site treatment, storage, and disposal facilities (TSDFs) to ensure they maintain the documentation and data required by regulations and DOE Orders to ensure cradle-to-grave tracking is complete.
- Administer the waste management coordinator (WMC) program.
- Store hazardous, asbestos, and polychlorinated biphenyl (PCB) waste in accordance with regulatory and Laboratory requirements.
- Operate a waste pickup service from the generator's site to TA-54.
- Serve as the Laboratory point-of-contact (POC) for off-site shipments of hazardous and chemical waste, low-level waste (LLW), and mixed low-level waste (MLLW) for treatment or disposal.
- Store transuranic (TRU) waste, TRU-mixed waste, and MLLW in accordance with regulatory and Laboratory requirements.
- Store and/or treat applicable liquid wastes not managed by Waste Services–Hazardous and Mixed Waste (WS-HM-WO)
- Dispose of LLW, including radioactively contaminated PCBs and asbestos waste.
- Maintain the TRU Waste, Waste Profile, and Chemical and Low-level Waste databases.

5.5.2 Environmental Waste Management Operations Radioactive Liquid Waste (EWMO-RLW)

EWMO-RLW must:

- Oversee operations related to the transfer and treatment of radioactive liquid wastewater.
- Manage, operate, and maintain the EWMO-RLWs at TA-50 and TA-21.
- Treat liquid waste at the EWMO-RLWs and maintain the Radioactive Liquid Waste Collection System (RLWCS) for transferring radioactive liquid waste from generator sites to the EWMO-RLW.

5.5.3 Hazardous & Mixed Waste Operations, WS-HMWO

WS-HMWO must:

- Submit reports, notices, and permit applications in accordance with permit, regulatory, and Laboratory requirements.
- Serve as the point-of-contact (POC) for Laboratory personnel regarding hazardous, solid, mixed, and Toxic Substances Control Act (TSCA)-regulated waste.
- Negotiate with regulatory agencies on hazardous, solid, mixed, and TSCA permits.
- Conduct performance assessments of generators' operations and treatment, storage, and disposal facilities (TSDFs).
- Maintain required records and data.
- Provide waste sampling, characterization, and environmental monitoring services.
- Provide technical and regulatory support to operating groups.

5.5.4 Water Quality and Hydrology (ENV-WQH)

ENV-WQH must:

- Perform environmental monitoring activities to ensure Laboratory operations do not adversely affect public safety, health, or the environment.
- Provide technical and regulatory support to operating groups.
- Provide institutional coordination of water quality permits and documentation.
- Serve as a liaison with regulatory agencies.
- Maintain environmental monitoring records and data in accordance with regulatory and Laboratory requirements.
- Provide audits/assessments for National Pollution Discharge Elimination System (NPDES) facilities.

5.5.5 Waste Acceptance, WS-WA

WS-WA must:

- Provide guidance on completing a request for generating waste with no path forward.

5.5.6 Institutional Training Services, CT-ITS

CT-ITS must:

- Design, develop, deliver, and evaluate Laboratory-wide waste management training outlined in DOE orders, state and federal regulations, and Laboratory permits and requirements that apply to Laboratory operations.
- Review and grant equivalencies for outside training when appropriate.
- Assist managers in determining staff waste management training needs.
- Maintain Laboratory-wide waste management training plans and records and enter those records into the Employee Development System (EDS).
- Implement Laboratory requirements concerning waste management training.
- Maintain the Laboratory waste management testing system.

5.5.7 Associate Directorate Environmental Programs - Waste Services (ADEP-WS)

ADEP-WS must:

- Implement the Laboratory's Transuranic (TRU) Waste Certification Program for disposal of TRU waste at the Waste Isolation Pilot Plant (WIPP).
- Coordinate TRU waste characterization and transportation activities to meet the WIPP waste acceptance criteria (WAC).
- Manage the components of TRU waste characterization, certification, and transportation activities at the Laboratory as they apply to disposal at WIPP.
- Coordinate, integrate, and ensure consistency with the DOE Carlsbad Area Office (DOE/CAO) National TRU Program (NTP), WIPP programs, policies, and guidance.
- Provide quality assurance oversight for the WIPP certification program.
- Assist TRU waste generators in the preparation of the TRU waste interface document (TWID) to meet the requirements for acceptance at WIPP.
- Obtain shipping authority from DOE/CAO for TRU waste transport from the Laboratory to WIPP.

5.5.8 Maintenance Site Support,Utilities and Infrastructure Group (MSS-UI)

MSS-UI must:

- Manage the Sanitary Waste System (SWS).
- Coordinate support service subcontractor activities such as recycling and transportation of solid waste dumpsters.

5.5.9 Waste Management Policies and Procedures Committee (WMPPC)

- The WMPPC must:
  - Review and approve all Laboratory-wide waste management documents before submittal to the Laboratory Standards and Requirements Project (LSRP).
  - Ensure management and potential users from affected organizations are involved in the document development, review, and revision processes.
  - Serve as the Office of Institutional Coordination (OIC) for Laboratory institutional waste management requirements documents.
  - Ensure that waste management institutional documents are controlled and current.

GUIDANCE NOTE: If requested and if resources are available, the WMPPC may also review facility-specific waste management documents.

- The permanent WMPPC must be composed of representatives from EWMO-RLW, WS, Chemical and Mixed Waste, WS, WS-HMWO, E-ESO, EES, ADEP-WS, the WMC Administrator, ES&H Training, the Nuclear Materials Technology (NMT) Division, the Applied Engineering & Technology (AET), the Dynamic Energetic Materials (DE) , the Laboratory Standards and Requirements Project, and other divisions as deemed necessary.

Additional organizations must be requested to provide subject matter experts (SMEs) when issues related to their areas of responsibility are addressed. Examples are Ecology & Air Quality, ENV-EAQ and .

- Requests for SMEs must be made to the member or invited organizations rather than to specific individuals.
- Institutional documents containing significant waste management-related issues or requirements must be reviewed and approved by the WMPPC.

- The WMPPC must also determine which division director(s) signature must be required for final approval of institutional waste management documents.
- All WMPPC comments must be resolved by majority agreement.

5.6 WASTE MANAGEMENT COORDINATOR (WMC) PROGRAM

5.6.1 WMC Program Administrator

The WMC Program Administrator must:

- Act as the primary point of contact for issues relating to the WMC Program.
- Verify WMC training records for completed training requirements and maintain a current list of authorized WMCs.
- Work with WMCs, CT-ITS and WS-HMWO to ensure WMC training is appropriate, updated and accurate.
- Coordinate and host the WMC Quarterly Meetings.
- Coordinate the activities of the WMC Inter-Divisional Team.
- Interface with all levels of management to ensure that the WMC Program effectively meets the need of the Laboratory.
- Provide waste management guidance to division/facility/program WMCs.
- Provide and supervise WMCs deployed to a division/facility/program on a service by request basis, as defined in Section 5.6.3 of this LIR.

5.6.2 WMC Inter-Divisional Team

The WMC Inter-Divisional Team must:

- Consist of the WMC Program Administrator, one WMC from each major waste generating facility/organization, one representative from WS-HMWO, and other representatives as needed or requested by the team.
- Meet regularly to oversee the WMC Program Laboratory-wide.
- Exchange information on best business practices, regulatory updates, and current waste management problems.
- Establish and monitor the performance objectives of the WMC Program.
- Provide information to the appropriate waste management organizations on concerns and issues that affect the WMC Program.

5.6.3 WMC Staffing Options

The WMC program allows for various staffing options to accommodate the individual needs of each organization. The following options or combination of options must be used.

- Organizational ownership: The WMC resides within the waste generating organization.
- Service by request: The waste generating organization can obtain full- and/or part-time WMC support services on an as-needed basis from WS-HMWO. Arrangements for this service require that a WS-HMWO Memorandum of Understanding outlining the estimated level of effort and an appropriate funding allocation be provided by the requesting organization to WS-HMWO
- Shared services: The waste generating organization can make arrangements with other waste generating organizations to share the support services of a WMC. Agreements on funding, level of effort, authorities, etc., are left solely to the managers involved. WS-HMWO need only be advised of the WMC's area of responsibility and/or authority.

6.0 EXCEPTIONS AND VARIANCES

Exceptions or variances must not be granted if they conflict with state or federal law, DOE, DOT, the Environmental Protection Agency (EPA), other applicable government agency regulations or permits; or with attaining the Laboratory's institutional performance goals and expectations (for example, the UC-DOE Contract Appendix F Performance Measures).

7.0 RECORDS

- Ordinarily, originals of documents must be maintained; however, if originals are unavailable, then a photocopy or carbon copy must be maintained.
- Original WPFs, CWDRs, and TWSRs must be maintained by WS-HMWO.
- Treatment, storage, and disposal facilities (TSDFs) must maintain the original shipping documents for waste received at their facilities.
- Generating organizations must maintain or archive records documenting waste characterization, to include acceptable knowledge (AK) and transport/transfer documents.

8.0 HISTORY

11/01/98	LIR 404-00-02.0	Issued
11/30/02	LIR 404-00-02.3	Revised
03/29/07	LIR 404-00-02.4	Revised to reflect LANs organizational changes

Note: As of 03/29/07 - The organizational name changes in this document need full review to ensure responsibilities match, due to the new sub organizations that may or may not be named, or known at the time of this LANs review.

9.0 RESPONSIBLE OFFICE

Water Quality & RCRA, ENV-RCRA is the responsible office for this document and Waste Services, (WS) complies to ENV-RCRA in use of this document.

10.0 REFERENCES

20 NMAC 4.1, *New Mexico Hazardous Waste Regulations*

New Mexico Hazardous Waste Act, NM Statutes Annotated, §§74-4-1 to –13

20 NMAC 9.1, New Mexico Solid Waste Regulations

New Mexico Solid Waste Act, NM Statutes Annotated, §§74-9-1 to –42

15 U.S.C. §§ 2601-2629 et seq., *The Toxic Substances Control Act, as amended*

33 U.S.C. § 1251 et seq., *The Clean Water Act, as amended*

42 U.S.C. § 6901 et seq., *The Resource Conservation and Recovery Act of 1976, as amended*

10 CFR § 830, *Nuclear Safety Management*

29 CFR § 1910.120, Hazardous Waste Operations and Emergency Response

29 CFR § 1910.1200, Hazardous Communications

40 CFR § 61, Subpart M, National Emissions Standard for Asbestos

40 CFR § 61.154, Standard for Active Waste Disposal Sites

40 CFR § 122, *National Pollutant Discharge Elimination System*

40 CFR § 258,*Criteria for Municipal Solid Waste Landfills*

40 CFR § 261, *Identification and Listing of Hazardous Waste*

40 CFR § 264, *Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities*

40 CFR § 268, *Land Disposal Restrictions*

40 CFR § 761, *Polychlorinated Biphenyl's (PCBs) Manufacturing, Processing, and Distribution in Commerce and Use Prohibitions*

40 CFR § 763, *Asbestos*

49 CFR § 172, *Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements*

49 CFR § 173, *Shippers, "General Requirements for Shipments and Packaging"*

Executive Order 12873, Federal Acquisition, Recycling, Waste Prevention and the Pollution Prevention Act of 1990

DOE Order 435.1, *Radioactive Waste Management*

DOE Order 460.1A, Packaging and Transportation Safety

DOE Order 460.2, *Departmental Material Transportation and Packaging Management*

DOE Order 5400.1, *General Environmental Protection*

DOE Order 5400.5, Radiation Protection of the Public and the Environment

DOE Order 414.1, Quality Assurance

DOE/LLW-75T, Data Quality Objectives

NQA-1, *Quality Assurance Requirements for Nuclear Facility Application*

EPA Publication SW846; *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*

EPA QA/G-4, *Guidance for DQO Process*

LIR 301-00-02, *Exception and Variances to Laboratory Operating Implementation Requirements*

LIR404-00-03, *Hazardous and Mixed Waste Requirements for Generators*

LIR404-00-04, *Managing Solid Waste*

LIR404-00-05, *Radioactive Waste Management*

LIR404-00-06, *Managing PCBs*

LIR404-10-01.0, *Packaging and Transportation*

LIG404-00-01, *Instructions for Completing the TRU Waste Storage Record*

LIG404-00-02, *Acceptable Knowledge*

LIG404-00-03, *Instructions for Completing the Waste Profile Form*

LIG404-00-04, *Instructions for Completing the Chemical Waste Disposal Request*

11.0 APPENDICES

Appendix A. Waste Management Document Institutional Requirements and Guidance

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APPENDIX A

Waste Management Document Institutional Requirements and Guidance

LIR Document Number	Title	Waste Types Covered
LIR404-00-02	General Waste Management Requirements	General requirements that apply to all waste types
LIR404-00-03	Hazardous and Mixed Waste Requirements	Hazardous and mixed waste
LIR404-00-04	Managing Solid Waste	Commercial; construction and demolition debris; New Mexico special including: treated formerly characteristic hazardous, asbestos, sludge, spill of chemical substance or commercial product, dry chemicals which become characteristically hazardous when wetted, petroleum contaminated soils, infectious; chemical; administratively controlled; and pharmaceutical-controlled waste
LIR404-00-05	Managing Radioactive Waste	Solid low-level, mixed and TRU waste
LIR404-00-06	Managing Polychlorinated Biphenyls (PCBs)	Polychlorinated Biphenyls including PCB waste
LIG404-00-01	TRU Waste Storage Record	Guidance on completing the form
LIG404-00-02	Acceptable Knowledge	Guidance for when to use and how to document acceptable knowledge to characterize waste
LIG404-00-03	Waste Profile Form	Guidance for completing the WPF

APPENDIX B
Contact List

Associate Directorate Environmental Programs - Waste Services (ADEP-WS) 5-1686

Biosafety, 7-8229

Criticality Safety, (SBD-CS), 7-4789

Dynamic Energetic Materials (DE) 7-5653

Earth and Environmental Sciences (EES)

Ecology & Air Quality, ENV-EAQ 5-0235

Emergency Response - Response Services - Hazardous Materials Response (ER-RS-HAZMAT) 5-5237

Emergency Response (ER), 9-911 or 7-6211

Emergency Response Fire Protection (ER-FP) 7-9045

Environment & Waste Facility Operations (EWMO), 7-4657

Environment, Safety, Health & Quality Directorate (ESH&Q), 7-4218

Environmental Characterization and Remediation (ENV-ECR), 7-0808

Environmental Stewardship Office (E-ESO), 7-6639

Environmental Waste Management Operations, Radioactive Liquid Waste (EWMO-RLW), 7-4301

Facility Management & Engineering (FM&E), 7-3363

Gas Processing Facility, 7-4406

Hazardous and Solid Waste Group (WS-HMWO), 7-0666

Hazardous Materials Transfer Approvals (ASM-MM), 7-4171

Radiation Protection (RP-1) 7-7171

Industrial Hygiene and Safety Group (IH/S-DO) 7-4644, 7-5231

Institutional Training Services, CT-ITS, 7-0059

KSL -

Legal Counsel (LC)7-3766

Materials Management Group (BUS-4), 7-4127

Nuclear Materials Control and Accountability (S-4), 7-5886

Operational Safety Section of the Industrial Hygiene & Safety Group (IH/S-DO)

Packaging and Transportation Section of the Materials Management Group (BUS-4), 5-9683 or 7-4493

Radiation Protection (RP-1), 7-7171

Hazardous and Mixed Waste Operaions (WS-HMWO)

Spill Prevention, Control and Countermeasure (SPCC) Plan (ENV-WQH), 5-4752

WS-HMWO Waste Certification Team (WS-HMWO), 7-4504

Emergency Management and Response, (ER-RS) 7-6211Environmental Protection Programs, Resource Conservation Recovery Act, ENV-RCA - 7-0666

Hazardous and Mixed Waste Operations (WS-HMWO), 7- Industrial Hygiene & Safety Group (IH/S-DO),

Waste Services (WS), 5-4000

Water Quality and Hydrology (ENV-WQH) 5-0453

WIPP Certification NEW = Earth and Environmental Sciences (EES)
Associate Directorate Environmental Programs - Waste Services (ADEP-WS), 7-8532

WMC Program Administrator (WS-HMWO), 7-1948

WS-HMWO Waste Certification WS-HMWO

APPENDIX C

Definitions

Additional definitions may be found in Waste Management Definitions

Laboratory Waste Management: For the purposes of this document, the Laboratory organizations responsible for establishing Laboratory waste-related requirements and guidance and the institutional treatment, storage, and disposal facilities constitute Laboratory Waste Management.

NOTE: Unless the term is immediately followed by a regulatory or DOE citation, the term is a Laboratory adaptation to clearly define the unique meaning and significance of the term at the Laboratory. Where "Solid" is capitalized the word is used as intended in RCRA, where "solid" is not capitalized, it refers to the physical state of the waste.

less than 90-day (<90 day-) accumulation area {40 CFR §262.34}: A designated space for accumulating hazardous or mixed waste in containers or tanks; the waste may not remain in the accumulation area longer than 90 days.

acceptable knowledge (AK): A waste stream characterization method that can be used to meet all or part of the waste analysis requirements appropriate for the waste media. The method may include documented process knowledge, supplemental waste analysis data, and/or facility records of analysis.

accumulation start date: The date on which each period of accumulation of waste in a container or tank begins.

acute hazardous waste: Discarded commercial chemical products, manufacturing chemical intermediates, off-specification commercial chemical products, or technical grades of the chemical that are identified in 40 CFR §261.33 (e) as acute hazardous waste or hazardous wastes with a hazard code of "P."

administratively controlled waste: Waste that is nonhazardous and nonradioactive that may not be disposed of at a commercial or municipal solid waste landfill. This includes, but is not limited to, classified waste, sensitive waste, certain New Mexico Special Wastes, and empty containers greater than 30 gallons.

asbestos waste: Waste that contains more than 1% of any of the following naturally occurring crystalline minerals: chrysotile, amosite, crocidolite, tremolite, actinolite, and anthrophyllite; may be friable or nonfriable.

biological waste: See "noninfectious biological waste."

compactible waste: Materials that are capable of undergoing volume reduction, such as paper, plastic, and glass.

contact-handled radioactive waste: Packaged waste with an external surface dose rate not exceeding 200 mrem/hr.

decommissioning: The permanent removal from service of surface facilities or equipment.

decontamination: The removal of unwanted material (e.g., radioactive material) from personnel, equipment, or areas.

disposal: The discharge, deposit, injection, dumping, spilling, leaking, or placing of any waste into or on any land or water so that such waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

EPA hazardous waste number {40 CFR §260.10}: As defined by regulations promulgated under the RCRA and New Mexico HWA, the number assigned by the Environmental Protection Agency (EPA) to each type of hazardous waste listed in 40 CFR Part 261, Subparts C and D.

environmental restoration: A term used by the DOE to describe cleanup of DOE facilities and lands.

hazardous waste {40 CFR §261.3}: A Solid waste that is not excluded from regulation as a hazardous waste and is a listed hazardous waste or exhibits any of the hazardous characteristics: ignitibility, corrosivity, reactivity, or toxicity.

high explosive (HE) waste: Any waste containing material having an amount of stored chemical energy that starts a violent reaction when initiated by impact, spark, or heat. This violent reaction is accompanied by a strong shock wave and the potential for propelling high-velocity particles.

high-level waste (HLW) {DOE Order 435.1}: The highly radioactive waste material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations, and other highly radioactive material that is determined, consistent with existing law, to require permanent isolation.

infectious waste {20 NMAC 9.1.105AL}: A limited class of waste materials that carry a probable risk of transmitting disease to humans including, but not limited to, the following: regulated medical waste, infectious substances (etiologic agents), other potentially infectious materials (OPIM), and regulated waste.

knowledge of process: See "acceptable knowledge."

low-level radioactive waste (LLW) {DOE Order 435.1}: Radioactive waste that is not high-level waste, spent nuclear fuel, transuranic waste, byproduct material (as defined in section 11e.(2) of the *Atomic Energy Act of 1954*, as amended), or naturally occurring radioactive material.

medical waste: See "regulated medical waste."

mixed waste (MW){RCRA, 42 U.S.C.A. 6903(41)}: Any waste containing both hazardous waste and source, special nuclear, or by-product materials subject to the Atomic Energy Act of 1954.

New Mexico Special Waste {20 NMAC 9.1.105BZ}: The following types of Solid waste have unique handling, transportation, or disposal requirements to assure protection of the environment, public health, welfare, and safety: (treated formerly characteristic hazardous waste); packing house and killing plant offal; asbestos waste; ash; infectious waste; sludge, except compost that meets the provisions of 40 CFR Part 503; industrial Solid waste; spill of a chemical substance or commercial product; dry chemicals that when wetted become characteristically hazardous; and petrolcum-contaminated soils.

noncompactible waste: Materials not capable of being compacted or undergoing volume reduction, such as solid metal materials with minimum void space and metal bricks.

nonhazardous waste: Any waste that is not regulated as a hazardous waste by RCRA/HSWA but that may present a threat to human health or the environment and requires special administrative controls.

noninfectious biological waste: A biological waste that cannot be classified as an infectious substance or a regulated medical waste and is not subject to federal or state regulations on infectious waste, is not classified as an infectious substance or a regulated medical waste, and is not subject to federal or state regulations on infectious waste.

normal waste: Waste produced from (1) any type of production operation, analytical and/or research and development laboratory operations; (2) treatment, storage, and disposal operations "work for others"; or

(3) any other periodic and recurring work that is considered ongoing in nature. Such wastes arise from activities that occur regularly and that generate a waste stream of a predictable quantity and characterization and are not part of the Laboratory's environmental restoration activities.

off-normal waste: Waste that is generated or occurs on an unscheduled basis or is of unpredictable quantity and/or characteristics. Because of its unpredictable nature, this waste cannot be trended over an extended period of time.

orphaned waste: Any material or waste with an unknown origin or generator.

other potentially infectious materials (OPIM) {29 CFR §1910.1030(b)}:

(1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva (in dental procedures), any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; or other potentially infectious material that may result from the performance of the employee's duties.

(2) Any unfixed tissue or organ (other than intact skin) from a human, either living or dead.

(3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

polychlorinated biphenyl (PCB) waste: A waste containing the biphenyl molecule that has been chlorinated. PCB waste is regulated if the concentration of PCBs in the source material is greater than or equal to 50 ppm.

Radioactive Liquid Waste Collection System (RLWCS): A network of underground pipelines and associated equipment that carry radioactive liquid waste from Laboratory sites to the Environmental Waste Management Operations, Radioactive Liquid Waste EWMO-RLW. The RLWCS was formerly referred to as the Acid or Industrial Waste Line.

Environmental Waste Management Operations, Radioactive Liquid Waste EWMO-RLW: The radioactive liquid waste treatment plants managed and operated by the EWMO-RLW: the Main Plant at TA-50-1; the Pretreatment Plant in Room 60 and 60A at TA-50-1; and the pretreatment plant at TA-21-257 (DP-257).

radioactive waste: Waste that has been determined to contain added (or concentrated Naturally Occurring Radioactive Material [NORM]) radioactive material or activation products by either monitoring and analysis, acceptable knowledge, or both; or does **not** meet radiological release criteria.

recycled {40 CFR §261.2}: A material that is used, reused, or reclaimed. A material is reclaimed if it is processed to recover usable products or if it is regenerated. A material is used or reused if it is either employed as an ingredient in an industrial process to make a product or employed in a particular function or application as an effective substitute for a commercial product.

regulated medical waste {49 CFR §173.134(a)(4)}: A waste or reusable material, other than a culture or stock of an infectious substance, that contains an infectious substance and is generated in (1) the diagnosis, treatment or immunization of human beings or animals; (2) research pertaining to the diagnosis, treatment or immunization of human beings or animals; or (3) the production or testing of biological products.

regulated waste {29 CFR §1910.1030(b)}: Liquid or semi-liquid blood or other potentially infectious materials (OPIM), contaminated items that would release blood or OPIM in a liquid or semi-liquid state if compressed, items that are caked with dried blood or OPIM and are capable or releasing these materials

during handling, contaminated sharps, and pathological microbiological wastes containing blood or OPIM.

remote-handled (RH) radioactive waste: Packaged waste with an external surface radiation dose rate exceeding 200 mrem/hr.

sanitary wastewater: Human excreta and water-carried wastes from typical plumbing fixtures and activities, including, but not limited to, wastes from toilets, sinks, water fountains, bath fixtures, clothes- and dish-washing machines, and floor drains. Water-carried waste from non-residential type sources must be considered sanitary wastewater if the composition and concentrations of waste do not differ from typical domestic waste.

satellite accumulation area {40 CFR §262.34}: A designated space for accumulating hazardous and mixed waste where the volume of hazardous waste may not exceed 55 gal. or the volume of acutely hazardous waste may not exceed one quart. The accumulation area must be located at or near the point of generation and be under the control of the generator/operator of the process generating the waste.

segregate: To separate waste from nonwaste materials; to sort waste according to type, such as sorting radioactive from nonradioactive waste or hazardous from nonhazardous waste.

Solid waste {40 CFR §261.2}: As defined by regulations promulgated under the Resource Conservation and Recovery Act (RCRA) and the New Mexico Hazardous Waste Act, unless otherwise excluded, is any discarded material, either abandoned, recycled, or inherently waste-like, including liquids, solids, semisolids, and contained gases. Solid waste can be simply Solid or special, hazardous, nonhazardous, radioactive (including transuranic), or mixed waste. Waste consisting solely of source, special nuclear, or byproduct material, as defined by the Atomic Energy Act, is exempt from the Solid waste regulations as defined by RCRA. Environmental media (for example soil or water) is not Solid waste unless it is destined for disposal. For the more extensive definition under regulations promulgated under the New Mexico Solid Waste Act, refer to 20 NMAC 9.1.105BV.

storage: The holding of waste for a temporary period, at the end of which the waste is to be treated, disposed of, or stored elsewhere.

suspect radioactive waste: Waste that is generated in an area where radioactive materials are present but that cannot be practicably verified as being nonradioactive.

transuranic (TRU) waste {DOE 435.1}: Radioactive waste containing more than 100 nanocuries (3700 becquerels) of alpha-emitting transuranic isotopes per gram of waste, with half-lives greater than 20 years, except for: (1) high-level radioactive waste; (2) waste that the Secretary of Energy has determined, with the concurrence of the Administrator of the Environmental Protection Agency, does not need the degree of isolation required by the 40 CFR Part 191 disposal regulations; or (3) waste that the Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with 10 CFR Part 61.

newly-generated TRU waste: Waste generated after the development, approval, and implementation of a transuranic (TRU) waste characterization program that meets the requirements outlined in the Transuranic Waste Characterization Quality Assurance Program Plan. Newly generated TRU waste also includes any previously generated waste (retrievable stored waste) that undergoes any form of treatment, processing, or repackaging in accordance with the LANL Quality Assurance Project Plan.

retrievable TRU waste: Waste that is not classified by the DOE as permanently buried and that has been generated before the development and implementation of a transuranic (TRU) waste characterization program that meets the requirements outlined in the Transuranic Waste Characterization Quality Assurance Program Plan and that has been identified by the DOE as a candidate waste for retrieval.

treatment: When applied to hazardous waste or hazardous components of mixed waste, any method, technique, or process, including neutralization, designed to change the physical, chemical, radiological, or biological character or composition of any waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste nonhazardous, or less hazardous; safe to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.

universal waste {40 CFR §273}: Certain of the following types of hazardous waste are subject to the universal waste requirements of 40 CFR §273; for example, batteries, pesticides, and mercury thermostats. The universal waste requirements ease some of the regulatory requirements for collecting and managing these common waste types.

unknown waste: See "orphaned waste."

waste acceptance criteria (WAC): Criteria that must be met before a waste is accepted for treatment, storage, or disposal. Waste acceptance criteria may involve the physical form of a waste, a waste's container, its radioactivity, packaging, labeling, etc.

waste certification program: A systematic, documented approach, used by a waste generator organization to ensure that waste is managed in a manner that provides reasonable assurance that the treatment, storage, and disposal facilities/ waste acceptance criteria are met.

waste characterization: The determination of a waste's physical, radiological, and chemical characteristics with sufficient accuracy to permit proper classification and management.

waste generator: Any individual and his/her management (for example, a research scientist or project manager) having direct responsibility for operations that generate waste. A waste generator may be a member of the organization responsible for the facility or site where the waste was generated. Waste generators have the responsibility for proper characterization, storage, and disposal of the waste they generate.

waste management: The planning, coordination, and direction of those functions related to generation, handling, treatment, storage, transportation, and disposal of waste, as well as associated surveillance and maintenance activities.

Waste Management Coordinator (WMC): The individual responsible for coordinating waste management activities on behalf of waste generators, line managers, facility managers, field project leaders, waste management groups, and other Laboratory organizations. This individual also coordinates resolution of waste management issues on behalf of his/her waste-generating organization and reviews documents pertaining to the management of waste.

waste stream: A waste or group of wastes from one or more processes or facilities with similar physical, chemical, and/or radiological characteristics.

APPENDIX D

Acronyms

ADSMS	Associate Laboratory Director for Nuclear Weapons – Materials and Manufacturing
AET	Applied Engineering & Technology
AK	acceptable knowledge
CAO	Carlsbad Area Office
CFR	Code of Federal Regulations
CST	Chemical Science and Technology Division
CT-ITS MSS-UI	Institutional Training Services, Environmental Sciences and Waste Technologies Group Maintenance Site Services, Utilities and Infrastructure
CWDR	Chemical Waste Disposal Request
DE	Dynamic Energetic Materials (DE)
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
E-ESO	Environmental Stewardship Office
ENV-WQH	Water Quality and Hydrology
ES&H	environment, safety, and health
ESH	Environment, Safety, and Health Division
EWMO	Environmental Waste Management Operations
EWMO-RLW	Environmental Waste Management Operations Radioactive Liquid Waste
GWCP	Generator Waste Certification Program
HSWA	Hazardous and Solid Waste Amendments
LIG	Laboratory Implementation Guidance
LIR	Laboratory Implementation Requirement
LLW	low-level waste
LSRP	Laboratory Standards and Requirements Project
MLLW	mixed low-level waste
NMAC	New Mexico Administrative Code
NPDES	National Pollution Discharge Elimination System
NTP	National Transuranic Program
OBOD	open burn/open detonation
PCB	polychlorinated biphenyls
POC	point of contact

QA	quality assurance
RCRA	Resource Conservation and Recovery Act
RLWCS	Radioactive Liquid Waste Collection System
RO	Responsible Office
SWS	Sanitary Waste System
TRU	transuranic
TSCA	Toxic Substances Control Act
TSDF	treatment, storage, and disposal facility
TWSR	Transuranic Waste Storage Request
UHWM	Uniform Hazardous Waste Manifest
WAC	Waste Acceptance Criteria
WIPP	Waste Isolation Pilot Plant
WMC	Waste Management Coordinator
WMC-PPC	Waste Management Policy and Procedure Committee
WPF	Waste Profile Forms
WS-HMWO	Hazardous & Mixed Waste Operations
WS-WA	Waste Services-Waste Acceptance

Guidance

Appendix E

Recommended Major Implementation Criteria for Self-Assessment

(Non-Mandatory)

LIR Title	LIR Number
General Waste Management Requirements	LIR 404-00-02.3

The major implementation criteria listed below are provided to assist Laboratory organizations in assessing their implementation of this LIR. These criteria provide an objective basis for self-assessing implementation of the major requirements contained in the LIR. The LIR also states requirements in other areas, such as, scope, precautions, and responsibilities that, when applied, complement the successful implementation of these major requirements.

1. **The most important criterion for assessing the implementation status of this LIR should be, if applicable: Have the requirements contained in the LIR been communicated to the individual(s) responsible for performing the work?**
2. **In addition, the recommended major implementation criteria for self-assessment of this LIR are the following:**
   - Performance of the self-assessment of waste management activities for compliance with the stated requirements of this document
   - Development of action plans for identification and implementation of corrective actions where noncompliance is identified
   - Completion and documentation of the implementation of corrective actions, including training on new or revised activities

If implemented through the recommended self-assessment, the generating organization should identify any actions required to ensure compliance with this LIR.

Information Request No. 14

Attachment

1. LIR 404-00-02.4, General Waste Management Requirements
2. LIR 404-00-03.1, Hazardous and Mixed Waste Requirements
3. LIR 404-00-05.4, Managing Radioactive Waste
4. IPP 525.2, Packaging and Transportation
5. EP-DIR-SOP-4001, Document Control

1.0 Introduction and Purpose

1.01 Lessons Learned Note: *Click here* for Lessons Learned *that may apply* to the requirements contained in this LIR.

1.1 Overview

This LIR contains the Laboratory requirements that personnel generating hazardous and mixed waste must implement when characterizing and storing the waste. Hazardous and mixed wastes are regulated by the Resource Conservation and Recovery Act (RCRA), the New Mexico Hazardous Waste Act (NMHWA), and the New Mexico Administrative Code (20.4.1 NMAC), sometimes referred to collectively as "RCRA." Compliance with these federal and state requirements is mandatory for operations at the Laboratory that generate, store, and treat hazardous or mixed waste. Three other LIRs contain requirements specific to radioactive, solid, polychlorinated biphenyl (PCB) waste types.

This LIR complements LPR404-00-00.

See Appendix C (Guidance: Recommended Major Implementation Criteria for Self-Assessment).

1.2 In this Document

2.0 Acronyms

CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
ESH-5	Industrial Hygiene and Safety Group
ESH-19	Hazardous and Solid Waste Group
ES&H	environment, safety, and health
FWO-SWO	Facility & Waste Operations Division-Solid Waste Operations
HAZWOPER	hazardous waste operations and emergency response
IRF	Inspection Record Form
JCNNM	Johnson Controls Northern New Mexico
NMED	New Mexico Environment Department
MSDS	material safety data sheet
NMAC	New Mexico Administrative Code
NMHWA	New Mexico Hazardous Waste Act
OSHA	Occupational Safety and Health Administration
RCRA	Resource Conservation and Recovery Act (also used to collectively describe this act, the New Mexico Waste Act, and regulations promulgated thereunder)

SAA	satellite accumulation area
TSDF	treatment, storage, and disposal facility
UWA	universal waste area
WAP	Waste Analysis Plan
WMC	waste management coordinator
WMPCC	Waste Management Policy and Procedure Council
WPF	Waste Profile Form

3.0 Definitions

Acceptable knowledge: (AK) A waste stream characterization method that can be used to meet all or part of the waste analysis requirements for the waste media and may include documented process knowledge, supplemental waste analysis data, and/or facility records of analysis.

EPA hazardous waste number: As defined by regulations promulgated under the RCRA and New Mexico HWA, the number assigned by the Environmental Protection Agency (EPA) to each type of hazardous waste listed in 40 CFR Part 261, Subparts C and D.

Hazardous waste: Is a solid waste that is not excluded from regulation as a hazardous waste and is a listed hazardous waste or a waste that exhibits any of the hazardous characteristics (ignitability, corrosivity, reactivity, or toxicity).

Less-than 90 day (<90 day) accumulation area: {40 CFR §262.34} A designated space for accumulating hazardous or mixed waste in containers or tanks; the waste may not remain in the accumulation area longer than 90 days.

Mixed waste: Any waste containing both hazardous waste and source, special nuclear, or by-product materials subject to the Atomic Energy Act of 1954.

No-known-owner waste: Any material or waste with an unknown origin, history, generator, or process that does not have a defined owner.

Operator: The person responsible for the overall operation of a facility.

Recycled: A material that is used, reused, or reclaimed; i.e., material is reclaimed if it is processed to recover usable products or if it is regenerated. A material is used or reused if it is either employed as an ingredient in an industrial process to make a product or employed in a particular function or application as an effective substitute for a commercial product.

Satellite Accumulation Area: {40 CFR §262.34} A designated space for accumulating hazardous and mixed waste where the volume of hazardous waste may not exceed 55 gal. or the volume of acutely hazardous waste may not exceed one quart.

Solid waste: As defined by regulation promulgated under the Resource Conservation and Recovery Act (RCRA) and the New Mexico Hazardous Waste Act unless otherwise excluded. Any discarded material, either abandoned, recycled, or inherently waste-like material, including liquids, solids, semisolids, and contained gases.

GUIDANCE NOTE: Solid waste can be simply Solid or special, hazardous, nonhazardous, radioactive (including transuranic), or mixed waste. Waste consisting solely of source, special nuclear, or by-product material-as defined by the Atomic Energy Act-is exempt from the solid waste regulations as defined by RCRA. Environmental media (for example, soil or water) is not solid waste unless it is destined for disposal. For the more extensive definition under regulation promulgated under the New Mexico Solid Waste Act refer to 20 NMAC 9.1.105BV.

Treatment: When applied to hazardous or hazardous components of mixed waste, any method, technique, or process-including neutralization-designed to change the physical, chemical, or biological character or composition of any waste so as to neutralize such waste or so as to recover energy or material resources from the waste or so as to render such waste nonhazardous or less hazardous and safe to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.

Treatment, Storage, and Disposal Facilities. (TSDFs) As defined by RCRA in 40 CFR 264 and 265, a TSDF is a permitted or interim status hazardous waste management unit where hazardous or mixed waste may be stored or treated prior to disposal.

GUIDANCE NOTE: There are no active RCRA hazardous or mixed waste disposal units at the Laboratory. Waste subject to land disposal restrictions (40 CFR 268) will generally be subject to enforcement under the Federal Facilities Compliance Act if stored for more than one year.

Universal waste: Certain of the following types of hazardous waste are subject to the universal waste requirements of 40 CFR Part 273: batteries, pesticides, lamps and mercury thermostats.

GUIDANCE NOTE: The universal waste requirements ease some of the regulatory requirements for collecting and managing these common waste types.

Universal waste handler: A generator of universal waste or the owner or operator of a facility, including all contiguous property, that receives universal waste from other universal waste handlers, that accumulates universal waste and sends universal waste to another universal waste handler or to a destination facility or to a foreign destination.

Waste generator: Any individual and his or her line management (for example, a research scientist or project manager) having direct responsibility for operations that generate waste.

GUIDANCE NOTE: A waste generator may be a member of the organization responsible for the facility or site where the waste was generated. Waste generators have the responsibility for characterization, storage, and disposal of the waste they generate.

Waste management coordinator: (WMC) The individual responsible for coordinating waste management activities on behalf of waste generators, line managers, Facility Managers, Field Project Leaders, the Waste Management groups, and other Laboratory organizations.

GUIDANCE NOTE: This individual also coordinates resolution of waste management issues on behalf of his or her waste-generating organization and reviews documents pertaining to the management of waste.

4.0 Scope and Applicability

This document provides waste generators and TSDF operators with the requirements that must be implemented to characterize and manage waste according to state and federal regulations and Laboratory expectations.

The requirements shall apply to all Laboratory individual waste generators, their Safety and Environment Responsible line-management chain, and all organizations that handle, treat, store, dispose of, or transport Laboratory waste.

All waste generation activities, including environmental restoration waste generation activities, shall implement the requirements contained in this LIR.

The requirements for managing hazardous waste shall apply to consumer products when they are to be discarded, regardless of where they were purchased.

5.0 Precautions and Limitations

The requirements contained in this LIR do not address all conceivable situations. Any suggestions for changes in the requirements or requirements interpretations shall be referred to the Hazardous and Solid Waste Group.

GUIDANCE NOTE: Failure to implement the requirements in this LIR could cause the Laboratory to incur penalties and fines due to findings of noncompliance by the RCRA regulatory authorities.

6.0 Requirements

6.1 Division Directors

In addition to the responsibilities contained in LIR404-00-02, Division Directors, Program Managers, and Program Directors shall:

- Ensure that the federal, state, and Laboratory requirements specified in this document are implemented.
- Ensure that waste generators and TSDF operators recognize and manage hazardous and mixed wastes in accordance with the requirements contained in this LIR.
- Designate an owner for waste when no specific owner can be identified.

6.2 Waste Management Coordinators (WMC)

In addition to the responsibilities in LIR404-00-02, WMCs shall:

- Register waste accumulation/storage areas with the Hazardous and Solid Waste Group.
- Contact the Hazardous and Solid Waste Group regarding any unusual situations or possible variances or exceptions to the requirements contained in this LIR (see LIR301-00-02).

6.3 Hazardous and Solid Waste Group (ESH-19)

In addition to the responsibilities contained in LIR404-00-02, the Hazardous and Solid Waste Group shall maintain registration records for all hazardous and mixed waste accumulation/storage areas at the laboratory.

6.4 Generators

In addition to the responsibilities contained in LIR404-00-02, waste generators shall:

- Implement the requirements contained in NMHWA, New Mexico Administrative Code (NMAC) 20.4.1, 40 CFR Part 262, "Standards Applicable to Generators of Hazardous Waste;" 40 CFR Part 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities;" 40 CFR Part 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities"; and 40 CFR Part 273, "Standards for Universal Waste Management."
- Provide a detailed description of the waste to assist the waste management organizations and the regulatory organizations in determining the classification and management required for the waste.
- Identify RCRA-regulated hazardous waste

GUIDANCE NOTE: Information useful in identifying hazardous and mixed waste can often be obtained from:

- The label on the original container,
- Material safety data sheets (MSDSs),
- Manufacturers' product descriptions,
- Knowledge of the process ("acceptable knowledge" or "AK") that generated the waste,
- Past experience with the waste stream, or
- Analysis of a sample(s) of the waste.

The information in Appendix B can assist waste generators in making a hazardous waste determination.

6.4.1 No-known-owner waste

- The following actions shall be implemented when a no-known-owner waste is identified:

- Contact WMC and safety and environment responsible manager.
- Manage it as a hazardous waste.
- Mark the waste "HAZARDOUS WASTE" and store it in an accumulation area.

- A Request-for-Analysis form shall be submitted to the Hazardous and Solid Waste Group as soon as practicable if waste with no known owner needs to be analyzed. The generator may initiate other sampling and analysis alternatives if and only if these alternate methods satisfy the requirements in SW-846 Test Methods.

6.4.2 Accumulation/storage areas

Generators shall accumulate or store waste in a registered hazardous waste accumulation or storage area.

GUIDANCE NOTE: The Laboratory has four types of accumulation/storage areas:
- Satellite Accumulation Area (SAA)
- Less-than 90 day Accumulation Area (< 90)
- Universal Waste Area (UWA)
- Treatment, Storage, and Disposal Facilities (TSDFs)

6.4.3 General Requirements for Accumulation Areas:

- Containers shall be marked with the words "HAZARDOUS WASTE" or with other words, such as "*acetone*", that specifically identify the contents.

  GUIDANCE NOTE: The contents and the words "HAZARDOUS WASTE" should be marked on the container. The container label should not have chemical formulas or abbreviations.

- If a container holds mixed waste, it shall also be labeled "RADIOACTIVE."
- If mixed waste is stored, it shall be posted in accordance with LPR402-712.
- Containers holding hazardous or mixed waste shall be closed during storage, except when it is required to add or remove waste.
- Containers shall be in good condition and compatible with the waste to be stored.

- If containers are not in good condition or are leaking, the contents shall be transferred to a container in good condition.
- All leaks or spills of hazardous or mixed waste shall be cleaned up immediately.
- All waste containers shall be segregated according to the compatibility of the types of waste held.
- The Inspection Record Forms (IRFs) for less-than 90-day accumulation areas, training records, and hazardous waste determination records shall be retained permanently, in accordance with DOE requirements (see DOE-AL Memorandum LESH:PBS:0031, "Moratorium on the Destruction of Records").
- All accumulation areas shall be identified by a prominently posted sign. The Hazardous and Solid Waste Group or your WMC shall be contacted for signs.
- Chemical waste that is not hazardous or mixed waste shall not be subject to the time or volume restrictions under RCRA.

GUIDANCE NOTE: Chemical waste that is not hazardous or mixed waste does not have to be stored or accumulated in an accumulation/storage area.

GUIDANCE NOTE: Containers holding liquids should have secondary containment.

6.4.4 Requirements for Satellite Accumulation Areas (SAAs)

- SAAs shall be under control of the operator of the process generating the waste.
- SAAs shall be at or near the point of generation and serve a process, a room, or a suite of rooms.

GUIDANCE NOTE: A suite of rooms is a group of rooms that are next to each other or across a hallway from one another.

- An SAA shall not accumulate a total of more then 55 gal. of hazardous or mixed waste or 1 qt of acutely hazardous or mixed waste.
- If the volume limit is exceeded, the generator shall mark the containers holding the excess accumulation of hazardous waste with the date the excess amount began accumulating . The generator shall ensure the waste is

transferred to a <90-day accumulation area or a TSDF within three calendar days.

- The SAA shall only serve processes located on the same floor of the building as the SAA.
- An SAA operator shall ensure that physical controls (for example, door or cabinet locks) are in place if the area is located outside a building or in an area without its own physical controls.
- An SAA operator shall ensure that administrative and/or physical controls are in place.
- Administrative controls shall include:
  - Consultation with a WMC
  - Posting of the name and phone number of the SAAs primary contact
  - The establishment of a list of "authorized users"
- All containers shall have the generator name and WPF number or a log sheet (inventory system). While WPF numbers are being acquired, containers shall be marked with "WPF Number Pending."

6.4.5 Requirements for < 90-Day Accumulation Areas

- Within a 90-day period, the generator shall transfer the waste to a TSDF or treat the waste.
- If an extension to the time limit is required for waste in a < 90 day accumulation area, the information shall be submitted to the Hazardous and Solid Waste Group by day 70 of the 90 days.

GUIDANCE NOTE: An extension can be granted by NMED if the extension is needed due to unforeseen, temporary, and uncontrollable circumstances.

- When an extension is required, the Hazardous and Solid Waste Group shall be provided the following information:
  - Justification of why the extension is required and what has been done to-date to move the waste.
  - A written action plan that ensures the waste will be moved before the 30-day extension ends.

- Containers shall be clearly marked with the words "HAZARDOUS WASTE."
- Containers shall be clearly marked with the accumulation start date and the labels shall be visible for inspection.
- The accumulation start date shall start when the container first receives waste or when the container is first received in the accumulation area.
- Containers with a concentration of volatile organic compounds (VOCs) greater than 500 ppm by weight shall be monitored for emissions unless they meet DOT specifications under 49 CFR Part 178. Other exclusions from the emission monitoring requirement can be found in 40 CFR §265.1080.
- The < 90 day accumulation area shall be equipped with the required eyewash and safety showers, spill control equipment, communications and alarm equipment, and emergency equipment for the types of hazards posed at the site. The equipment must be tested and readiness maintained to ensure it operates as required in time of an emergency. See "Chemical Management", LIR402-510-01, for more specific eyewash and safety shower requirements.
- An Industrial Hygiene/Safety person shall determine if equipment is required and if equipment is not required, this determination shall be documented in a memo to file.
- A copy of the TSDF Contingency Plan shall be maintained at the facility.

  NOTE: The TSDF Contingency Plan applies to both TSDFs and <90-day accumulation areas.
- A copy of the Emergency/Site Specific Plan shall be present at the site.
- All operators shall be familiar with the location and contents of the above-mentioned plans.
- A minimum aisle space of 2 ft shall be maintained between stored waste containers to allow for visual inspection and entry by emergency personnel and equipment.
- Inspections shall:
  - Be performed weekly.
  - Be documented in an IRF, a copy of which shall be forwarded to the Hazardous and Solid Waste Group on a weekly basis.
  - Be performed on the day waste is actively managed (adding, removing, or treating waste).

- Any action required to correct a deficiency documented in an inspection form shall be addressed as soon as practical and the IRF must show progress and/or resolutions.
- Personnel shall not work unsupervised in a <90-day accumulation area until the individual has attended the required training.
- Personnel shall complete the required training courses within six months after the date of employment, new work assignment, or new position handling or generating hazardous or mixed waste.

GUIDANCE NOTE: Waste Generation Overview training is recommended as a prerequisite for RCRA Personnel Training

- RCRA Personnel Training and annual RCRA Refresher Training shall be required for <90-day accumulation area operators.
- Workers whose training has expired shall not work in < 90 day accumulation areas.

GUIDANCE NOTE: Hazardous Waste Workers should notify their supervisor formally of expired training.

Treatment by the Waste Generator

Treatment by the waste generator (without a permit) in tanks or containers shall be authorized, provided the following regulatory requirements are met:

- A RCRA Hazardous Waste Treatment Report Form (WTRF) and a waste analysis plan (WAP), if required , shall be completed and submitted to the Hazardous and Solid Waste Group before any hazardous waste is treated.
- A WAP must be completed and implemented when treating to meet Land Disposal Restrictions (LDR) treatment standards found in 40 CFR §268.40.
- The WAP shall contain detailed chemical and physical analysis of a representative sample of the prohibited waste(s) being treated and contain all the information required to treat the waste(s) in accordance with the requirement in 40 CFR §268.7(a)(5), including the selected testing frequency. (See the Hazardous and Solid Waste homepage for the WTRF instructions and a sample WAP by clicking here.)

6.4.6 Requirements for Universal Waste Areas (UWAs)

- All containers holding universal waste shall be marked with the words "UNIVERSAL WASTE" and any additional terms, such as

"BATTERIES," "LAMPS," "PESTICIDES," or "MERCURY THERMOSTATS," or shall be marked as required by 40 CFR §273.14.

- All containers holding universal waste in a UWA shall be marked with the accumulation start date or identified as required by 40 CFR §273.35(c).
- Within one year of the accumulation start date, universal waste must be either recycled or transferred to a TSDF.
- The UWA shall be identified by a prominently posted sign. The Hazardous and Solid Waste Group or the responsible WMC shall be contacted for signs.
- All leaks or spills of universal waste shall be cleaned up immediately.

Batteries

- Batteries shall be removed from units or devices prior to placement in accumulation areas.
- The universal waste rule shall apply only to hazardous waste batteries as defined in 40 CFR §260.10 or §273.6 and shall not apply to the unit or device in which the battery is contained.
- Lead-acid batteries that are being recycled shall be managed either by the requirements contained in 40 CFR Part 266, Subpart G, or by the universal waste requirements contained in this section.

GUIDANCE NOTE: The following activities may be conducted by the handler as long as the casing of each individual battery cell is not breached and remains intact and closed (except that cells may be opened to remove electrolyte and closed immediately after removal):

- Battery sorting by type.
- Mixing batteries in one container.
- Discharging batteries to remove the electric charge.
- Regenerating used batteries.
- Disassembling batteries or battery packs to individual batteries or cells.
- Removing the electrolyte from batteries.

- Battery handlers who remove electrolyte or who generate other solid waste as a result, shall determine if the waste is hazardous (see Appendix B). Such handlers shall be considered the generator of the resultant material. If the resultant material is hazardous, it shall be managed in accordance with the requirements contained in 40 CFR §262.34.

Lamps

- Lamps shall be placed in a container or package.
- Containers or packages holding lamps shall be kept closed except when adding or removing waste.

Pesticides

- Pesticide containers shall be kept closed except when adding or removing waste.

Thermostats

- Handlers of universal waste thermostats shall ensure that any release to the environment is prevented.
- Handlers who remove the mercury-containing ampules from thermostats shall ensure:
  - Ampules are handled in a manner that prevents breakage:
  - Ampules are removed only over a containment device.
  - A mercury clean-up system is readily available to immediately transfer any mercury that spills or leaks from broken ampules from the containment device to a container meeting the requirements of 40 CFR §262.34.
- If mercury spills or leaks from broken ampules, the contents shall be transferred from the containment device to a container that meets requirements of 40 CFR §262.34. Additionally, the requirements below shall be met.
  - The area in which the ampules are removed shall be ventilated and monitored to ensure OSHA exposure levels for mercury are adhered to.
  - Employees removing the ampules shall be thoroughly familiar with required mercury waste handling and emergency procedures, including transfer of mercury from containment devices to specified containers.
  - Removed ampules shall be stored in closed, non-leaking containers that are in good condition.
  - Removed ampules shall be packed in the container as required to prevent breakage during storage, handling, and transportation.
- Mercury handlers who remove mercury or who generate other solid waste as a result, shall determine if the waste is hazardous (see Appendix B).

Such handlers shall be considered the generator of the resultant material. If the resultant material is hazardous, it shall be managed in accordance with the requirements contained in 40 CFR §262.34.

7.0 Treatment, Storage and Disposal Facilities

GUIDANCE NOTE: For more specific information about TSDFs contact the Hazardous and Solid Waste Group (ESH-19).

TSDFs shall:

- Implement the requirements contained in NMHWA, the New Mexico Administrative Code (20.4.1 NMAC), 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities" and 40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities.
- Notify the LANL Site Treatment Plan Manager before one year has passed since the generation date of mixed low level waste if the waste continues to be in storage.
- Characterize all waste.
- Ensure waste containers are in good condition.
- Identify the TSDF by prominently posting a "Danger—Unauthorized Personnel Keep Out" sign. Signs shall be in English and Spanish and must be legible from 25 feet.
- Establish and follow a written inspection schedule.
- Perform daily or weekly inspections.
- Document inspections in an IRF and forward a copy to the Hazardous and Solid Waste Group (ESH-19) on a weekly basis.
- Ensure any action required in an inspection form to correct a deficiency is addressed as soon as practicable and that the IRF indicates progress and/or resolutions.
- Perform inspections on the day waste is actively managed (adding, removing, or treating waste).
- Ensure that IRFs, training records, shipping manifests and shipping papers, and hazardous waste determination records are permanently maintained in accordance with the DOE requirements documented in DOE-AL Memorandum LESH:PBS:0031, "Moratorium on the Destruction of Records."
- Segregate ignitable and reactive waste and protect the waste from sources of ignition.

- Conspicuously post a "No Smoking" sign when ignitable or reactive waste is being stored.
- Maintain a minimum aisle space of 2 ft between stored waste containers to allow for visual inspection and entry by emergency personnel and equipment.
- Maintain required eyewash and safety showers, spill control equipment, communication and alarm equipment, and emergency equipment as required by Section 6.4.5 of this LIR.
- Maintain a copy of the TSDF Contingency Plan. TSDF workers shall be familiar with the location and contents of this plan.
- Maintain written operating records. (Click here for details and instructions regarding the operating record.)
- Ensure that containers with free liquids have secondary containment of sufficient capacity to contain 10% of the volume of containers or the volume of the largest container, whichever is greater.
- Containers with a concentration of volatile organic compounds (VOCs) greater than 500 ppm by weight shall be monitored for emissions unless they meet DOT specifications under 49 CFR Part 178. Other exclusions from the emission monitoring requirement can be found in 40 CFR §264.1080 and §265.1080.
- Establish and implement a written Waste Analysis Plan.
- Ensure that wastes shipped to an off-site TSDF are manifested in accordance with the requirements contained in 40 CFR §265.71 and §264.71 and the DOT requirements specified in LIR405-10-01.
- Ensure that each copy of the shipping manifest is signed and dated.
- Ensure that discrepancies found upon receipt are noted on the shipping manifest.
- Ensure that only personnel who have the required training or refresher are permitted to work in the TSDF.
- Ensure personnel complete the required training courses within six months after the date of employment, new work assignment, or new position if this involves handling or generating hazardous or mixed waste.
- Ensure TSDF workers complete RCRA Personnel Training and the annual RCRA Refresher Training.

GUIDANCE NOTE: Waste Generation Overview training is recommended as a prerequisite for RCRA Personnel Training

- Ensure that workers with expired training do not work in TSDF.

GUIDANCE NOTE: Hazardous Waste Workers should formally notify their supervisor of expired training.

- Ensure TSDF workers complete Hazardous waste operations (HAZWOPER) training and refresher.

GUIDANCE NOTE: HAZWOPER Refresher for TSDF Workers (course #9575) fulfills annual refresher requirements for RCRA Refresher (course #9581).

8.0 References

"Chemical Management", Los Alamos National Laboratory Implementation Requirement, LIR402-510-01.

"General Waste Management Requirements," Los Alamos National Laboratory Implementation Requirement, LIR404-00-02.

"Managing Polychlorinated Biphenyls," Los Alamos National Laboratory Implementation Requirement, LIR404-00-06.

"Managing Radioactive Waste," Los Alamos National Laboratory Implementation Requirement, LIR404-00-05.

"Managing Solid Waste," Los Alamos National Laboratory Implementation Requirement, LIR404-00-04.

"Test Methods for Evaluating Solid Wastes," Environmental Protection Agency report SW 846 (November 1986).

"Waste Profile Form Guidance," Los Alamos National Laboratory Implementation Guidance Document, LIG 404-00-03.

Contingency Plan, The Los Alamos National Laboratory Hazardous Waste Permit, issued November 8, 1999 and subsequent revisions.

"Packaging & Transportation," Los Alamos National Laboratory Implementation Requirement LIR405-10-01.

New Mexico Administrative Code, 20.4.1 NMAC.

New Mexico Hazardous Waste Act (NMHWA).

Resource Conservation and Recovery Act, as amended, 42 U.S.C. Sec. 6901 et seq.

Title 40 CFR 261, "Identification and Listing of Hazardous Waste."

Title 40 CFR 262, "Standards Applicable to Generators of Hazardous Waste."

Title 40 CFR 262.34, "Accumulation Time."

Title 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities."

Title 40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities."

Title 49 CFR 173,"Shippers—General Requirements for Shipments and Packaging."

9.0 Document Ownership

The Office of Institutional Coordination for this document shall be the Waste Management Policy and Procedure Committee. The WMPCC is responsible for the contents of this document.

10.0 Appendices

Appendix A. Contact List

Appendix B. Supplemental Information/Guidance

Appendix C. Guidance: Recommended Major Implementation Criteria for Self-Assessment

Appendix A

Contact List

Solid Waste Operations (FWO-SWO), 5-6158

Environmental Stewardship Office (ESO), 7-6639

ES&H Training Group (ESH-13), 7-0059

Hazardous and Solid Waste Group (ESH-19), 5-9527

Industrial Hygiene and Safety Group (ESH-5), 7-5231

Johnson Controls Northern New Mexico (JCNNM), Redistribution and Marketing, 7-2109

Packaging and Transportation Section of BUS-4, 7-6122

Appendix B

Supplemental Information/Guidance

Listed Waste Listed hazardous waste consists of chemical compounds identified in 40 CFR Part 261, Subpart D.

(Click here for listed and characteristic waste.)

Characteristic Waste Waste may be hazardous if it exhibits one or more of the following characteristics: ignitability, corrosivity, reactivity, or toxicity.

Ignitability. (40 CFR §261.21) Waste is ignitable if it

- is a liquid or waste containing a free liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, and has a flash point less than 140°F (Pensky-Martens Closed Cup tester);
- is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes **and**, when ignited, burns so vigorously and persistently that it creates a hazard;
- is an ignitable compressed gas; or
- is a DOT oxidizer as defined in 49 CFR §173.151.

Ignitable waste is hazardous and has EPA hazardous waste number **D001.**

Corrosivity. In accordance with the requirements contained in 40 CFR §261.22, any liquid measured for corrosivity must contain water. An aqueous solution with a pH of 2.0 or less, or 12.5 or greater, or a liquid that corrodes steel at a rate greater than 6.35 millimeters per year at a test temperature of 130°F is a hazardous waste. The pH of a solution is the measure of hydrogen and hydroxide ions in water-containing (aqueous – waste containing at least 20% free water by volume) solutions. This waste has a EPA hazardous waste number **D002.**

Reactivity. (40 CFR §261.23) Waste is reactive if it

- is normally unstable and readily undergoes violent change without detonating at standard temperature and pressure;
- violently reacts on contact with water;
- forms potentially explosive mixtures with water;

- when mixed with water, generates toxic gases, vapors or fumes in a quantity that will present a danger to human health or the environment;
- releases cyanide or sulfide when exposed to pH conditions between 2.0 and 12.5 and can generate toxic gas, vapors, or fumes in a quantity that will present a danger to human health or the environment;
- is capable of detonation or explosive reaction if it is subjected to strong initiating source or if heated under confinement;
- is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure; or
- is classified as an explosive or forbidden explosive as defined in 49 CFR Part 173 Subpart C.

Reactive waste is hazardous and has EPA hazardous waste number **D003**.

Toxicity. (40 CFR §261.24) Waste is toxic if it is (or is contaminated with) one of the metals, pesticides, or organic chemicals (hazardous waste numbers **D004** through **D043**), in the stated concentrations (mg/L), as determined by the toxicity characteristic leaching procedure (TCLP). (See the Hazardous and Solid Waste homepage for the listing.) Questions concerning this characteristic should be directed to the WMC or the Hazardous and Solid Waste Group.

Empty Containers

As stated by RCRA, containers shall be considered empty if:

- all wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container (pouring, pumping and aspirating), and
- no more than one inch of residue remains on the bottom of the container, or
- no more than 3 percent by weight of the total capacity of the container or inner liner if the container is less than or equal to 110 gallons in size, remains in the container, or
- no more than 0.3 percent by weight of the total capacity of the container or inner liner—if the container is greater than 110 gal. in size—remains in the container.
- For containers of compressed gases, the pressure in the container approaches atmospheric.
- For acutely hazardous wastes (P-listed), regardless of the volume of the residual product, the container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate. (Note: It is not recommended that this method be used because it increases the amount of waste.)

- Empty containers smaller than 30 gal. may be discarded as commercial solid waste at a municipal landfill as long as the container did not contain a P-listed (acutely hazardous) chemical.
- Empty containers larger than 30 gal. can be recycled through FWO-SWO or JCNNM Redistribution and Marketing Branch. If containers cannot be recycled they should be disposed of through FWO-SWO.

Appendix C

Guidance:
Recommended Major Implementation Criteria for Self-Assessment

LIR Title	LIR Number
Hazardous and Mixed Waste Requirements	LIR404.00.03.1

The major implementation criteria listed below are provided to assist Laboratory organization in assessing their implementation of this LIR. These criteria provide an objective basis for self-assessment implementation of the major requirements contained in the LIR. The LIR also states requirements in other areas, such as, scope, precautions, and responsibilities that, when applied, complement in successful implementation of these major requirements.

1. The most important criterion for assessing the implementation status of this LIR should be, if applicable: Have the requirements contained in the LIR been communicated to the individual(s) responsible for performing the work?
2. In addition, the recommended major implementation criteria for self-assessment of this LIR are the following:
    - Performance of the self-assessment of waste management activities for compliance with the stated requirements of this document.
    - Development of actions plans for identification and implementation of corrective actions where noncompliance is identified.
    - Completion and documentation of the implementation of corrective actions, including training on new or revised activities.

If implemented through the recommended self-assessment, the generating organization should identify any actions required to ensure compliance with this LIR.

1.0 Introduction

Lessons Learned NOTE: *Lessons Learned may apply* to the requirements contained in this LIR.

1.1 Overview

Not a standalone document, this Laboratory Implementation Requirement (LIR) is part of a series of waste management documents. This document only contains requirements that are unique to radioactive waste. Radioactive waste is regulated under DOE Order 435.1, *Radioactive Waste Management*. The primary waste management document that contains the general non-waste-specific requirements that apply to all waste types is, LIR 404-00-02, "General Waste Management Requirements." (Note: This LIR will be replaced by IMP 933 at a later date by Water Quality & RCRA, (ENV-RCRA)

This LIR states the implementation requirements that support this document must be effective on the date of issue.

1.2 In this Document

2.0 Purpose

This document specifies the requirements that must be implemented for managing radioactive waste; that is, low-level waste (LLW), transuranic (TRU) waste, radioactive liquid waste (RLW), and the radioactive components of mixed waste.

3.0 Scope & Applicability

This document addresses the institutional requirements for managing radioactive waste. The requirements of this LIR must apply to individual waste generators, their safety and environment responsible line management chain, and all organizations that handle, treat, store, dispose of, or transport radioactive waste.

Radioactive waste produced as the result of accelerator operations will be managed as LLW.

4.0 Precautions & Limitations

GUIDANCE NOTE: See IMP 932 for Hazardous and Mixed Waste Requirements," requirements related to the hazardous constituents of mixed waste. (Note IMP 932 will replace LIR 404-00-03.1 Hazardous and Mixed Waste Requirements) Radioactive waste that contains hazardous waste is also regulated under the Resource Conservation and Recovery Act (RCRA) and by the New Mexico Hazardous Waste Act; therefore, adherence to these federal and state requirements must be mandatory for waste operations at the Laboratory.

Radioactive waste that contains a substance regulated under the Toxic Substances Control Act (TSCA) must also be managed in accordance with federal regulations governing the waste. Waste leaving a radiological control area must be characterized as radioactive or meet the release criteria of LIR 402-704-01, "Contamination Control."

GUIDANCE NOTE: This document does not contain requirements for managing high-level waste as defined by the Department of Energy (DOE)

Consistent with the ISM Description Document (LAUR-98-2837) Section 5.3.2, this LIR includes those requirements in DOE Order 435.1, *Radioactive Waste Management*, that

require a consistent implementation by all elements of the Laboratory to which those requirements apply.

GUIDANCE NOTE: The users of this LIR should be aware that DOE O 435.1 includes other requirements, such as design requirements for storage facilities for radioactive waste, in addition to those listed in this LIR.

5.0 Acronyms

CWDR	Chemical Waste Disposal Request
DOE	Department of Energy
ENV-WS	Facility & Waste Operations–Solid Waste Operations
HLW	high-level waste
LIR	Laboratory Implementation Requirement
LLW	low-level waste
MLLW	mixed low-level waste
RCRA	Resource Conservation and Recovery Act
RLW	radioactive liquid waste
WS-HMWO	Hazardous and Mixed Waste Operations
RWMB	radioactive waste management basis
TRAMPAC Control	TRUPACT-II Authorized Methods for Payload
TRU	transuranic
TSDF	treatment, storage, and disposal facility
TWID	TRU Waste Interface Document
TWSR	Transuranic Waste Storage Record
WAC	waste acceptance criteria
WIPP	Waste Isolation Pilot Plant
WPF	Waste Profile Form

6.0 Definitions

The use of the generic term "mixed waste" must refer to both mixed low-level waste (MLLW) and mixed TRU waste.

High-level waste (HLW) – the highly radioactive waste material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations, and other highly radioactive material that is determined, consistent with existing law, to require permanent isolation {DOE O 435.1}.

Low-level waste (LLW) – radioactive waste that is not high-level waste, spent nuclear fuel, transuranic waste, byproduct material (as defined in Section 11e.(2) of the *Atomic Energy Act of 1954*, as amended), or naturally occurring radioactive material {DOE O 435.1}.

Staging – The accumulation of LLW to facilitate transportation, treatment, and/or disposal.

Storage – For the purpose of this document, the holding of radioactive waste for a temporary period, at the end of which the waste is treated, disposed of, or stored elsewhere {DOE O 435.1}.

Transuranic (TRU) waste – radioactive waste containing more than 100 nanocuries (3700 becquerels) of alpha-emitting transuranic isotopes per gram of waste, with half-lives greater than 20 years, except for: (1) high-level radioactive waste; (2) waste that the Secretary of Energy has determined, with the concurrence of the Administrator of the Environmental Protection Agency, does not need the degree of isolation required by the 40 CFR Part 191 disposal regulations; or (3) waste that the Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with 10 CFR Part 61 {DOE O 435.1}.

7.0 Implementation Requirements

7.1 Division Director, Program Director, Program Manager

The safety and environmentally responsible line management chain must ensure the implementation of the responsibilities and requirements for managing radioactive waste in accordance with LIR 404-00-02.

7.2 Waste Generator

7.2.1 General Requirements

The waste generator's responsibilities and requirements for managing radioactive waste must be implemented in accordance with the requirements contained in LIR 404-00-02 General Waste Management Requirements."

7.2.2 Waste Generation Planning

- Prior to generating radioactive waste, planning must be performed to address the entire life cycle of the waste stream.
- Waste without an identified disposal path must meet the requirements of LIR 404-00-02 prior to generation.

7.2.3 Waste Minimization

Individual waste generators and waste-generating organizations must minimize the volume of routine radioactive waste generated. At a minimum, the following methods must be used to minimize waste.

- Controlling the movement of materials into and through radiological control areas.
- Reducing, reusing, or recycling radioactive and mixed waste at the source whenever technically and economically feasible.
- Segregating waste at the point of generation (for example, radioactive, non-radioactive, and hazardous wastes must not be commingled).

GUIDANCE NOTE: The following segregation techniques should be considered as part of a waste minimization program

- Segregating LLW as either *compactible* or *noncompactible*.
- Segregating beryllium, polychlorinated biphenyls (PCBs), asbestos, and infectious materials from radioactive wastes.

7.2.4 Radioactive Waste Management Basis

Radioactive waste generators must have a radioactive waste management basis (RWMB) that is consistent with Attachment A.

7.2.5 Labeling Radioactive Waste

Packages of radioactive waste must be marked such that their contents can be identified.

Packages of radioactive waste in storage must also be labeled and marked as "Radioactive" as required by the following documents:

- PLAN-WASTEMGMT-002, "LANL Waste Acceptance Criteria," Solid Waste Operations.
- LIR 402-712-01, "Radiological Posting," Los Alamos National Laboratory.
- LPR 402-717-0, "Storage and Labeling," Los Alamos National Laboratory.
- LIR 404-00-03, "Hazardous and Mixed Waste Requirements for Generators," Los Alamos National Laboratory. (The requirements of this document must be applicable if the waste contains hazardous constituents).

7.2.6 Characterization

In addition to the characterization requirements contained in LIR 404-00-02, radioactive waste generators must provide the following characterization data to the receiving facility:

- Physical and chemical characteristics
- Volume, including the waste and any stabilization or absorbent material
- The identities, activities, and concentrations of radionuclides
- Weight of the container and contents
- Characterization date
- Generating source
- Packaging date
- Any additional data specified in the receiving facility's acceptance requirements

GUIDANCE NOTE: The Waste Profile Form (WPF) and Chemical Waste Disposal Request (CWDR) or Transuranic Waste Storage Record (TWSR) contain the characterization requirements listed above.

The data quality objectives process must be used for identifying characterization parameters and acceptable uncertainty in characterization data.

Waste characterization data, container information, and generation, storage, and transportation information must be transferred with or be traceable to the waste.

7.2.7 Packaging

Radioactive waste must be packaged to ensure containment and protection for the duration of the anticipated storage period and until disposal is achieved or until the waste is removed from the container.

Details on specific packaging requirements must be provided in the facility-specific waste acceptance requirements.

7.2.8 Transportation Requirements

Wastes must be transported pursuant to the requirements contained in IPP 525.2 Hazardous Material (Hazmat) Packaging and Transportation.

The requirements contained in IPP 525.2 , Hazardous Material (Hazmat) Packaging and Transportation" must be implemented for the specific packaging, labeling, and shipping documentation requirements that are additional to those listed in the receiving facility's acceptance requirements.

Waste generators must not cause radioactive waste to be transported to a receiving facility without prior approval from the receiving facility. Before transportation to a treatment, storage, and disposal facility (TSDF), shipments of radioactive waste must have approved documentation as described in
LIR 404-00-02, "General Waste Management Requirements."

Shipments of radioactive waste must be scheduled in accordance with the requirements contained in PLAN-WASTEMGMT-002, "LANL Waste Acceptance Criteria," before delivery to a TSDF.

The requirements above must not apply to transferring waste within an access-controlled area.

7.2.9 Specific Requirements for LLW and MLLW

7.2.9.1 General

If solid LLW is disposed of at the Laboratory, it must be disposed of at TA-54, Area G.

Off-site disposal of LLW is an option; however, the Waste Services (ENV-WS) must approve and coordinate such disposals.

Waste management coordinators or waste generators must notify ENV-WS of their intent to ship MLLW to any off-site TSDF; ENV-WS will coordinate such shipments.

7.2.9.2 Documentation

A WPF (see LIG 404-00-03, "Instructions for Completing the Waste Profile Form") and a CWDR must be completed for LLW and MLLW to be disposed of or stored at TA-54. A WPF must be completed for liquid waste destined for the Hazardous & Mixed Waste Operations, WS-HMWO

CWDRs must **not** be required for liquid LLW transferred to the WS-HMWO through the radioactive liquid waste collection system.

A CWDR (in addition to the WPF) must be completed for liquid LLW transported to the WS-HMWO.

7.2.9.3 Staging and Storage at Generator Sites

The staging of LLW for the purpose of accumulating quantities of waste to facilitate transportation, treatment, and disposal must not exceed 90 days.

If the LLW is not transferred to a treatment or disposal facility within 90 days, it must be stored in accordance with the requirements of Section 7.3 of this document.

LLW that has an identified path to disposal must not be stored longer than one year prior to disposal.

Pipelines and auxiliary facilities necessary for the transfer of RLW must be maintained in an operational condition.

7.2.10 Specific Requirements for TRU and Mixed TRU Waste

7.2.10.1 General

Transuranic waste must be identified as defense or non-defense waste.

TRU waste generated at the Laboratory and destined for the Waste Isolation Pilot Plant (WIPP) must be certified by the Environmental Management Group for the Laboratory.

GUIDANCE NOTE: Appendix A contains information on the WIPP TRU waste certification program.

A WPF and a TWSR (see LIG 404-00-01, "Waste Generator Instructions for Completing a Transuranic Waste Storage Record") must be completed for TRU and mixed TRU waste to be stored at TA-54.

7.2.10.2 Storage

TRU waste must be stored in accordance with the requirements of Section 7.3 of this document.

Pipelines and auxiliary facilities necessary for the transfer of RLW must be maintained in an operational condition.

7.3 Waste Storage Area Operators

7.3.1 General

Waste Storage Area Operators must:

- Develop a RWMB (See Attachment A).
- Submit the waste acceptance requirements to DOE for approval.
- Evaluate waste received for acceptance.
- Implement a process for inspecting and maintaining containers.
- Store waste in a manner and location that protects the integrity of the waste for the time of storage and minimizes worker exposure.
- Establish storage areas for radioactive waste in a weather-protected area.

- Ensure the waste storage area is posted with the appropriate warning signs in accordance with the requirements contained in LIR 402-712-01, "Radiological Posting."
- NOT store LLW that has an identified path to disposal for longer than one year prior to disposal.
- Store MLLW in accordance with the requirements contained in LIR 404-00-03, "Hazardous and Mixed Waste Requirements."
- Maintain pipelines and auxiliary facilities necessary for the transfer of RLW in an operational condition.

7.3.2 Storage to Facilitate Treatment

This section addresses specific Laboratory radioactive waste management requirements that are included within the DOE/LANs contract. Radioactive waste that is capable of detonation, explosive decomposition, reaction at anticipated pressures and temperatures, explosive reaction with water, or is pyrophoric must not be stored longer than 1 year.

- This storage must be solely for the purpose of the accumulation of such quantities necessary to facilitate proper treatment. Each container must be clearly marked to identify its contents and the date each period of accumulation begins.
- The details on how this waste is stored safely must be addressed in the RWMB.
- If the waste is also hazardous, the storage must be at a RCRA storage area.
- Storage of such waste beyond 1 year must require the approval of the Department of Energy.
- Additionally, if the waste is also hazardous and greater 1 year since the date of generation, the waste must be added to the LANL Site Treatment Plan and approval must be obtained from the New Mexico Environment Department.
- The storage facility must bear the burden of proving that such storage is solely for the purpose of accumulation to facilitate treatment.

7.3.3 Contingency Storage for RLW

For off-normal or emergency situations involving RLW storage or treatment, spare capacity must be maintained to receive the largest volume of liquid contained in any one storage tank or treatment facility.

7.4 Waste Treatment Operators

Waste Treatment Operators must:

- Develop a RWMB (See Attachment 1).
- Submit the waste acceptance requirements to DOE for approval.
- Evaluate waste received for acceptance.
- Have contingency storage that meets the requirements of Section 7.3.3 of this document.
- Maintain pipelines and auxiliary facilities necessary for the transfer of RLW in an operational condition.

7.5 Waste Services (ENV-WS)

ENV-WS must:

- Receive and store MLLW and TRU waste in TA-54's storage facilities.
- Receive and dispose of solid LLW at the TA-54 disposal facility.
- Coordinate and track off-site shipments of LLW and MLLW.
- Transport MLLW within LANL boundaries.

GUIDANCE NOTE: Other organizations are not precluded from transporting MLLW within LANL boundaries.

- Review and approve documentation for LLW, MLLW, and TRU waste before shipment.
- Approve and schedule LLW, MLLW, and TRU waste shipments to TA-54.
- Coordinate and track off-site TRU waste shipments, excluding shipments destined for WIPP.

7.6 Waste Management Coordinator

The Waste Management Coordinator's responsibilities for managing radioactive waste must be implemented in accordance with the requirements contained in LIR 404-00-02.

7.7 Radioactive Liquid Waste Group (ENV-WS)

ENV-WS must:

- Receive and process radioactive liquid waste.
- Maintain the pipelines used for transferring liquid waste to TA-50 as required by LIR 404-00-02.
- Transport radioactive liquid waste from the generators' sites to TA-50.

7.8 Environmental Sciences and Waste Technologies Group (E-ET)

E-ET must:

- Manage the WIPP waste certification program for the Laboratory.
- Characterize and certify TRU waste for shipment to WIPP.
- Receive, process, and transport TRU waste for WIPP characterization and certification purposes.
- Review and approve certification documentation of TRU waste destined for WIPP.
- Process characterization, certification, and shipment data before TRU waste shipments are released to WIPP.
- Coordinate and track off-site radioactive waste shipments to WIPP.

8.0 Records

The requirements contained in LIR 404-00-02, "General Waste Management Requirements," must be implemented for general waste record keeping and documentation requirements that apply to all waste types.

Original WPFs, CWDRs, and TWSRs must be forwarded to ENV-WS for approval.

Original WPFs, CWDRs, and TWSRs must be maintained as permanent records by Waste Services (ENV-WS).

9.0 History

01/05/99	LIR404-00-05.0	Initial Issue
02/02/01	LIR404-00-05.3	Revised
03/23/07	LIR404-00-05.4	Revised to reflect LANs Review

10.0 REFERENCES

10.1 Document Ownership

The Waste Management Policy and Procedure Council must be the OIC for this document.

10.2 Referrals

Hazardous & Mixed Waste Operations, WS-HMWO - 5-6158

Facility Waste Services, WS-FWS - 6 - 2243

Water Quality and RCRA, ENV-RCRA - 667 0666

Environmental Protection, ENV,- 5-5416

TRU Waste Project Support, WS-TWPS

Operations Support (OSD) : Packaging & Transportation, 7- 6612

10.3 References

"Acceptable Knowledge," LIG404-00-02.

"Atomic Energy Act ," Public Law 703 (1954).

"Contamination Control," LIR402-704-01.

Department of Energy Order 460.1A, "Packaging and Transportation Safety."

Department of Energy Order 460.2, "Departmental Material Transportation and Packaging Management."

Department of Energy Order 435.1, "Radioactive Waste Management."

"General Waste Management Requirements," LIR404-00-02.

"Hazardous and Mixed Waste Requirements," LIR404-00 03.

"Instructions for Completing the TRU Waste Storage Record," LIG 404-00-01.

"Instructions for Completing the Waste Profile Form," LIG 404-00-03.

"LANL Waste Acceptance Criteria," PLAN-WASTEMGMT-002.

"Packaging and Transportation," LIR405-10-01.

"Packaging, Transporting, Storing, Controlling, and Handling Radioactive Material and Radioactive Waste," Environmental Safety and Health document ESH-1-12-01.

"Radiological Posting," LIR402-712-01.

"Storage and Labeling," LPR402-717-0.

Title 40, Code of Federal Regulations Part 264, *Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.*

Title 40, Code of Federal Regulations Part 270, *Administered Permit Programs: The Hazardous Waste Permit Program.*

"Transuranic Waste Certification Plan," TWCP-PLAN-0.2.4-001.

11. Attachments and Appendices

Attachment A. Radioactive Waste Management Basis

Appendix A. Los Alamos WIPP-Waste Certification Plan

Appendix B. Recommended Major Implementation Criteria for Self-Assessment

Attachment A

Radioactive Waste Management Basis

General
Radioactive waste facilities, operations, and activities must have an RWMB consisting of physical and administrative controls to ensure the protection of workers, the public, and the environment. The RWMB must reference or define the conditions under which the facility may operate. The following specific controls must be part of the RWMB:

- Generators. The waste certification program
- Treatment Facilities. The waste acceptance requirement and the waste certification program
- Storage Facilities. The waste acceptance requirement and the waste certification program

RWMB must be submitted to DOE for approval no later than October 1, 2001. (Note this document must be updated by Water Quality & RCRA, (ENV-RCRA).)

Operations must be curtailed or facilities shut down for failure to establish, maintain, or operate consistently with an approved RWMB.

Waste Certification Program
A waste certification program must be developed, documented, and implemented to ensure that the waste acceptance requirements of facilities receiving radioactive waste are met. The certification program must:

- Designate the officials who have authority to certify and release waste for shipment;
- Specify what documentation is required for waste generation, characterization, shipment, and certification
- Provide requirements for auditability, retrievability, and storage of required documentation and specify the records retention time

Radioactive waste must be certified as meeting the waste acceptance requirements before it is transferred to the receiving facility.

Radioactive waste that has been certified must be managed to ensure that it maintains its certification status.

Waste Acceptance Requirements

The waste acceptance requirements must establish the facility's requirements for the receipt, evaluation, and acceptance of waste.

Waste acceptance requirements for radioactive waste storage areas and treatment facilities must specify the following:

- Allowable activities and/or concentrations of radionuclides
- Acceptable waste form and/or container requirements to ensure the chemical and physical stability of the waste under conditions that might be encountered during transportation, storage, treatment, or disposal
- Restrictions or prohibitions on waste, materials, or containers that may adversely affect waste handlers or compromise facility or waste container performance

The basis, procedures, and levels of authority required for granting exceptions to the waste acceptance requirements must be contained in the waste acceptance requirements.

Monitoring Program

Facilities that generate, treat, or store radioactive waste must establish and maintain a monitoring program as part of the RWMB. In developing the monitoring program, facilities must consider the need for monitoring of the following parameters:

- Temperature
- Pressure for closed systems
- Radioactivity in ventilation exhaust
- Radioactivity in liquid effluent stream
- Flammable and explosive mixtures of gases

If a facility stores RLW, the need for monitoring the following additional parameters must be considered:

- Liquid level
- Waste volume
- Waste chemistry

Facility monitoring programs must include verification that passive and active control systems have not failed.

Appendix A

Los Alamos WIPP-Waste Certification Plan

(For Information Only)

The Los Alamos National Laboratory (LANL) Transuranic-Waste Certification Plan incorporates the certification and transportation requirements of the WIPP Waste Acceptance Criteria (WAC) for both newly generated and retrievably stored waste. The transportation requirements are detailed in Section 4.0, "LANL Compliance for TRUPACT-II Authorized Methods for Payload Control (TRAMPAC)," of the TRU-Waste Certification Plan. The TRU-Waste Certification Plan is currently applicable to waste certification activities for contact-handled (CH) TRU waste only. When the Carlsbad Area Office (CAO) develops and publishes requirements for remote-handled (RH) TRU waste and RH-TRU-related TRAMPAC, the TRU-Waste Certification Plan will be revised to reflect the incorporation of these requirements.

The TRU-Waste Certification Plan establishes the programmatic framework and criteria within which waste generators must operate to ensure their wastes can be certified as meeting the requirements of the WIPP WAC. The Plan includes the following sections:

- Section 2.0 – Certification Program Organization
- Section 3.0 – LANL Compliance for WIPP WAC
- Section 4.0 – LANL Compliance for TRAMPAC
- Section 5.0 – Quality Assurance Program Plan
- Section 6.0 – Preparation of TRU-Waste Interface Documents

Section 6.0 is most important to TRU waste generators, as it describes the requirements for Laboratory waste-generator-specific plans and procedures to demonstrate compliance with the TRU-Waste Certification Plan. The generator is required to prepare TRU Waste Interface Documents (TWIDs). These TWIDs serve to document the process by which waste stream analytical data and other acceptable knowledge is evaluated to ensure each waste stream is characterized, packaged, and certified in compliance with the WIPP WAC. If the requirements for sampling, characterization, and packaging are met, the waste will ultimately be certified and transported to WIPP.

Once a TWID has been prepared, it is subject to a Laboratory assessment regarding other the document meets the requirements in the TRU-Waste Certification Plan. The assessment consists of a review by certification program personnel (in the form of an audit) of all facility-specific, certification-related documents referenced in the TWID.

Appendix B

Guidance:

Recommended Major Implementation Criteria for Self-Assessment

(Non-Mandatory)

LIR Title	LIR Number
Managing Radioactive Waste	LIR404-00-05.2

The major implementation criteria listed below are provided to assist Laboratory organizations assess their implementation of this LIR. These criteria provide an objective basis for self-assessing implementation of the major requirements contained in the LIR. The LIR also states requirements in other areas, such as scope, precautions, and responsibilities, that when applied, complement the successful implementation of these major requirements.

1. **The most important criterion for assessing the implementation status of this LIR should be, if applicable: Have the requirements contained in the LIR been communicated to the individual(s) responsible for performing the work?**
2. **In addition, the recommended major implementation criteria for self-assessment of this LIR are the following:**
   - Performance of the self-assessment of waste management activities for compliance with the stated requirements of this document
   - Development of action plans for identification and implementation of corrective actions where noncompliance is identified
   - Completion and documentation of the implementation of corrective actions, including training on new or revised activities

If implemented through the recommended self-assessment, the generating organization should identify any actions required to ensure compliance with this LIR.

No: P151-1
Revision: 3

Issued: 10/05/10
Effective Date: 10/05/10

LANL Packaging and Transportation Program Procedure

1.0 PURPOSE

This document describes the requirements that will be implemented for hazardous and nonhazardous Packaging and Transportation (P&T). This document identifies the appropriate requirements based on the type of off-site shipment and/or on-site transfer performed.

2.0 AUTHORITY AND APPLICABILITY

2.1 Authority

This document is issued under the authority of the Laboratory Director to direct the management and operation of the Laboratory, as delegated to the Associate Director for Nuclear and High-Hazard Operations (ADNHHO) as provided in the Prime Contract. This document derives from the Laboratory Governing Policies, particularly the section on Safety.

- Issuing Authority (IA): Associate Director for Nuclear and High-Hazard Operations (ADNHHO)
- Responsible Manager (RM): Operations Support (OS) Division Leader
- Responsible Office (RO): Operations Support-Packaging and Transportation (OS-PT)

2.2 Applicability

The requirements identified in this document are applicable to Los Alamos National Laboratory (LANL or the Laboratory) P&T activities according to the type of shipment or transfer being performed. OS-PT is responsible for the development, implementation, and maintenance of P&T requirement documents and has institutional oversight responsibilities for all P&T activities.

This document applies to all personnel working at the Laboratory (including Los Alamos National Security, Limited Liability Company [LANS, LLC] employees, contractors, and official visitors) and all others who:

- offer hazardous materials for transfer or shipment,
- cause a hazardous material to be transported,
- perform pre-transportation and transportation functions for hazardous materials as identified in 49 Code of Federal Regulations (CFR) 171.1, *Applicability of Hazardous Materials Regulations (HMR) to persons and functions*,
- cause hazardous materials to be delivered to the Laboratory from Department of Energy (DOE) suppliers,
- perform as a driver or supervisor subject to 49 CFR 350–399, *Subchapter B—Federal Motor Carrier Safety Regulations* (FMCSRs), and
- perform transportation activities provided by regulated carriers and specified in DOE O 460.1C, *Packaging and Transportation Safety*.

3.0 PROCEDURE DESCRIPTION

This document covers a range of P&T activities for hazardous and nonhazardous materials moved off-site and on-site. Personnel performing P&T activities must comply with the requirements of this document through implementation as presented in the Laboratory P&T training program.

The document is divided into the following functional areas of requirements and guidance associated with the following types of shipments or material movements:

1. General requirements (see Section 3.1)
2. Off-site hazardous material shipments compliant with Department of Transportation (DOT) regulations (see Section 3.2)
3. On-site hazardous material transfers compliant with DOT regulations (see Section 3.3)
4. Transportation activities performed in accordance with Safety Basis Documents and implementing P&T Work Instructions (see Section 3.4)
5. Off-site shipments and on-site transfers of materials of national security interest, which are Category I and Category II Special Nuclear Material (SNM), nuclear components, and special assemblies. (see Section 3.5)
6. P&T activities compliant with FMCSR, DOE Orders, and DOT Regulations (see Section 3.6)
7. Transfer activities for radioactive material below the DOT-regulated threshold (see Section 3.7)
8. Other special and unique requirements (see Section 3.8)
9. Waste shipments (see Section 3.9)
10. Receipt of hazardous materials from DOE suppliers (see Section 3.10)
11. Traffic management duties with regard to nonhazardous materials (see Section 3.11)

3.1 General Requirements

1. OS-PT will ensure through training, oversight, and assessments that established P&T programs at the Laboratory meet regulations as applicable.
2. Before a shipment or transfer, the shipping papers for hazardous materials must be reviewed and approved by OS-PT or a Laboratory worker who has been approved as an Authorized Shipper by OS-PT. For guidance or clarification, contact OS-PT.
3. All organizations, facilities, groups, or personnel that schedule, perform, or coordinate the shipment or transfer of hazardous materials between sites at the Laboratory must ensure before initiation that the shipment or transfer is entered into the *P&T Institutional Plan of the Day* (a database that helps facilitate Laboratory-wide coordination of hazardous material transfers and shipments). On-site transfers are those moved on roads where public access is restricted, controlled, or denied through barriers or controlled access points; all others are considered off-site shipments. For guidance or clarification, contact OS-PT.
4. Hazardous materials must not be transported on-site or off-site in a private vehicle. Some off-site P&T activities may require the use of a rental vehicle. Contact OS-PT to ensure that all additional requirements are met.

5. If a facility-specific Documented Safety Analysis (DSA) does not address facility transportation activities, then the transferring of hazardous material must be conducted in accordance with 49 CFR, *Transportation*, (including FMCSR), or P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision).
6. The line organization performing any of the activities listed in Section 2.2 above must develop and submit a procedure for OS-PT review and concurrence before implementation of any of the listed activities.
7. All official communications external to the Laboratory concerning P&T activities must be coordinated through OS-PT.

   This includes incident notification required in 49 CFR 171.16, *Detailed Hazardous Materials Incident Reports*, and 40 CFR 302.6, *Environmental Protection Agency, Notification Requirements*.

   OS-PT requires a unified institutional posture and one-voice communication for the Laboratory P&T program. Organizations must inform OS-PT of campaigns that require any special transportation or packaging support at an early stage in order to meet this requirement.
8. Specific restrictions, limitations, and prohibitions for on-site transfers and off-site shipments of hazardous material are required when the Laboratory goes into Security Condition (SECON) 2 or higher. SECON 2 or higher requires the use of Form 1899, *Heightened Security Transport Request Form.* The *LANL Transportation Security Plan* (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov) assesses the security risks associated with shipping the hazardous materials listed in 49 CFR 172.800, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Safety and Security Plans—Purpose and Applicability,* and includes the appropriate measures to address these risks.
9. Procurement or lease of hazardous materials packagings for transport must use OS-PT approved written procurement specifications and inspection plans. Packaging procurement must meet the quality requirements of P&T-PLAN-025, *Quality Management Plan for P&T* (latest revision) (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov), and P840-1, *Procurement Quality.*
10. DOT general requirements 49 CFR, FMCSR, the hazardous materials transportation-related aspects of 40 CFR 260-299, *Environmental Protection Agency*, and 15 CFR 53.2601-2692, *Toxic Substances Control*, always apply to off-site transportation activities. Non-compliance with 40 CFR, *Protection of Environment*, and FMCSR may occur only for on-site transfers performed in accordance with the Laboratory TSD/Technical Safety Requirements [TSRs] or for facility-specific P&T activities having a facility DSA which is approved by the National Nuclear Security Administration (NNSA) and that addresses facility P&T activities. In these instances, DOE Order requirements apply (see Sections 3.4–3.9).

Table 1 provides regulatory references for use in the identification and packaging of hazardous materials for DOT-compliant shipments and transfers, and for non-compliant on-site transfers. Contact OS-PT for additional guidance and assistance.

Table 1. Material Characteristic and Packaging Requirements		
Topic	**Applicable Requirements**	
	Department of Transportation (DOT) Compliant	**On-Site Transportation Safety Document (TSD)**
Class 1		
Explosives	Material Definition according to 49 CFR 173 Subpart C (173.50-173.63), *Shippers—General Requirements for Shipments and Packagings, Definitions, Classification and Packaging for Class 1*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173 Subpart C (173.50-173.63), or 49 CFR 172.101, P101-8, *Explosives Safety* Packaging according to DOE O 461.1A, *Packaging and Transfer or Transportation of Materials of National Security Interest*, and/or DOE M 440.1-1A, *DOE Explosives Safety Manual* P&T-AP-021, *High Explosives Shipment Routing (Chemistry and Metallurgy Research [CMR] TSR-AC 5.6.2)*
Class 2		
Division 2.1 Flammable Gas	Material Definition according to 49 CFR 173.115(a), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (a) Division 2.1 (Flammable Gas)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.115(a), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14

Table 1. Material Characteristic and Packaging Requirements		
Topic	**Applicable Requirements**	
	Department of Transportation (DOT) Compliant	**On-Site Transportation Safety Document (TSD)**
Class 2 (Cont.)		
Division 2.2 Non-flammable, non-poisonous, compressed gas	Material Definition according to 49 CFR 173.115(b), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (b) Division 2.2 (non-flammable, non-poisonous, compressed gas—including compressed gas, liquefied gas, pressurized cryogenic gas, compressed gas in solution, asphyxiant gas and oxidizing gas),* or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.115(b), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Division 2.3 Gas poisonous by inhalation	49 CFR 173.115(c), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (c) Division 2.3 (Gas poisonous by inhalation)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.115(c), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Class 3		
Flammable Liquid	Material Definition according to 49 CFR 173.120, *Shippers—General Requirements for Shipments and Packagings, Class 3—Definitions, (a) Flammable Liquid*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.120, or 49 CFR 172.101 Packaging according P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14

Table 1. Material Characteristic and Packaging Requirements		
Topic	**Applicable Requirements**	
	Department of Transportation (DOT) Compliant	**On-Site Transportation Safety Document (TSD)**
Class 4		
Division 4.1 Flammable Solid	Material Definition according to 49 CFR 173.124(a), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (a) Division 4.1, (Flammable Solid)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.124(a), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Division 4.2 Spontaneously Combustible Material	Material Definition according to 49 CFR 173.124(b), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (b) Division 4.2, (Spontaneously Combustible Material)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.124(b), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Division 4.3 Dangerous When Wet	Material Definition according to 49 CFR 173.124(c), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (c) Division 4.3 (Dangerous when wet material)*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.124(c), or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14

Table 1. Material Characteristic and Packaging Requirements		
Topic	**Applicable Requirements**	
	Department of Transportation (DOT) Compliant	**On-Site Transportation Safety Document (TSD)**
Class 5		
Division 5.1 Oxidizer	Material Definition according to 49 CFR 173.127, *Shippers—General Requirements for Shipments and Packagings, Class 5, Division 5.1—Definition and assignment of packing groups*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.127, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Division 5.2 Organic Peroxide	Material Definition according to 49 CFR 173.128, *Shippers—General Requirements for Shipments and Packagings, Class 5, Division 5.2—Definitions and types*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.128, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Class 6		
Division 6.1 Poisonous Material	Material Definition according to 49 CFR 173.132, *Shippers—General Requirements for Shipments and Packagings, Class 6, Division 6.1—Definitions*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.132, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14

Table 1. Material Characteristic and Packaging Requirements		
Topic	**Applicable Requirements**	
	Department of Transportation (DOT) Compliant	**On-Site Transportation Safety Document (TSD)**
Class 6 (Cont.)		
Division 6.2 Infectious Substance	Material Definition according to 49 CFR 173.134, *Shippers—General Requirements for Shipments and Packagings, Class 6, Division 6.2—Definitions and exceptions*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.134, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Class 7		
Radioactive	Material Definition according to 49 CFR 173.433, *Shippers—General Requirements for Shipments and Packagings, Requirements for determining basic radionuclide values, and for the listing of radionuclides on shipping papers and labels*, and 49 CFR 173.436, *Shippers—General Requirements for Shipments and Packagings, Exempt material activity concentrations and exempt consignment activity limits for radionuclides** Packaging according to Columns 5 and 8 of 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions*	Material Definition according to 49 CFR 173.433 and 49 CFR 173.436 Packaging according to: ▪ P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision) ▪ P&T-TSR-001, *Technical Safety Requirements* (latest revision) ▪ SER TSD.01, *Safety Evaluation Report Approving Los Alamos National Laboratory (LANL) Transportation Safety Document (TSD)* (latest revision)
* Requirements of P121, *Radiation Protection,* also apply.		

Table 1. Material Characteristic and Packaging Requirements		
Topic	**Applicable Requirements**	
	Department of Transportation (DOT) Compliant	**On-Site Transportation Safety Document (TSD)**
Class 8		
Corrosive	Material Definition according to 49 CFR 173.136, *Shippers—General Requirements for Shipments and Packagings, Class 8—Definitions*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101, and 49 CFR 173.137, *Shippers—General Requirements for Shipments and Packagings, Class 8—Assignment of packing group*	Material Definition according to 49 CFR 173.136, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Class 9		
Miscellaneous	Material Definition according to 49 CFR 173.140, *Shippers—General Requirements for Shipments and Packagings, Class 9—Definitions*, or 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions* Packaging according to Columns 5 and 8 of 49 CFR 172.101	Material Definition according to 49 CFR 173.140, or 49 CFR 172.101 Packaging according to P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision), Chapter 14
Other Regulated Materials (ORMs)	Material Definition according to 49 CFR 173.144, *Shippers—General Requirements for Shipments and Packagings, Other Regulated Materials (ORMs)-Definitions*, and 49 CFR 172.101 No Packaging Specified	Not Applicable
If there are questions regarding applicable requirements, contact Operations Support-Packaging and Transportation (OS-PT).		

Table 2 provides regulatory references that are applicable to all shipments and transfers, and a representative selection of exceptions that are frequently used at the Laboratory.

Table 2. General Requirements for Off-Site and Compliant/Noncompliant On-Site Shipments

Shipment/Transfer Requirement or Exception	Regulatory Reference
Federal Motor Carrier Safety Regulation (FMCSR)	49 CFR 350–399, *Federal Motor Carrier Safety Regulations*
Shipping Papers	49 CFR 172 Subpart C, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Shipping Papers*
Marking	49 CFR 172 Subpart D, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Marking*
Labeling	49 CFR 172 Subpart E, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Labeling*
Placarding	49 CFR 172 Subpart F, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Placarding*
Emergency Response Information	49 CFR 172 Subpart G, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Emergency Response Information*
Training	49 CFR 172 Subpart H, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Training*
Safety And Security Plans	49 CFR 172 Subpart I, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Safety And Security Plans*, (Parts 172.800-804 for highway)
Commonly used exceptions	
Small Quantity Exceptions	49 CFR 173.4, *Shippers—General Requirements for Shipments and Packagings, Small Quantity Exceptions*
Materials of Trade Exceptions	49 CFR 173.8, *Shippers—General Requirements for Shipments and Packagings, Exceptions for non-specification packagings used in intrastate transportation*
Use of packagings authorized under special permits	49 CFR 173.22a, *Shippers—General Requirements for Shipments and Packagings, Use of packagings authorized under special permits*
Excepted packages for limited quantities of Class 7 (radioactive) materials	49 CFR 173.421, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for limited quantities of Class 7 (radioactive) materials*
Excepted packages for radioactive instruments and articles	49 CFR 173.424, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for radioactive instruments and articles*
Excepted packages for articles containing natural uranium or thorium	49 CFR 173.426, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for articles containing natural uranium or thorium*

Table 2. General Requirements for Off-Site and Compliant/Noncompliant On-Site Shipments	
Shipment/Transfer Requirement or Exception	**Regulatory Reference**
Transport requirements for Low Specific Activity (LSA) Class 7 (radioactive) materials and Surface Contaminated Objects (SCO)	49 CFR 173.427, *Shippers—General Requirements for Shipments and Packagings, Transport requirements for low specific activity (LSA) Class 7 (radioactive) materials and surface contaminated objects (SCO)*
Empty Class 7 (radioactive) materials packaging	49 CFR 173.428, *Shippers—General Requirements for Shipments and Packagings, Empty Class 7 (radioactive) materials packaging*
Fissile materials—exceptions	49 CFR 173.453, *Shippers—General Requirements for Shipments and Packagings, Fissile materials—exceptions*
Hazardous Communication for Class 7 Radioactive Material Shipments*	Form 2114, *Hazard Communication for Radioactive Material Shipments*
If there are questions regarding applicable requirements, contact Operations Support-Packaging and Transportation (OS-PT).	
* Required for on-site transfers of radioactive material.	

11. Form 2114, *Hazard Communication for Radioactive Material Shipments*, must be completed and accompany shipping papers for internal (between Technical Areas [TAs] at the Laboratory) shipments of Class 7 radioactive material when the package will be opened at the Laboratory receiving organization.
12. Items and/or empty packagings that are potentially contaminated by explosives are not to be transported on commercial passenger aircraft.

When 49 CFR, *Transportation* and DOE Orders are both applicable to a transportation activity and a conflict is noted, the more stringent of the two requirements must be met.

3.2 Department of Transportation (DOT) Compliant Off-Site Hazardous Material Shipments

All P&T activities in support of off-site shipments must meet 49 CFR, *Transportation* requirements. Personnel performing these activities must be trained and qualified in accordance with the Laboratory Hazardous Materials Packaging and Transportation (HMPT) training program.

Line personnel performing packager and shipper activities, with the intent to ship off-site, must be authorized by OS-PT before performing any P&T activities. Off-site is any area within or outside a DOE site to which the public has free and uncontrolled access; on-site is any area within the boundaries of a DOE site or facility to which access is controlled.

Note: Refer to Table 1 for guidance on applicable 49 CFR requirements associated with the shipment hazard class. In addition, shipping personnel must notify the Emergency Operations Center (EOC) in advance of a scheduled shipment, and must communicate emergency information to the EOC before initiating the shipment.

For each shipment of fissile material or more than Type "A" quantity of radioactive material, the consignee must be notified of the date of the shipment, the expected date of arrival and any special loading or unloading instructions. The consignee is required to notify the shipper by the end of the first working day after the estimated arrival date if the shipment has not been received.

Type "B" packages must be certified by a competent authority, such as DOE or the Nuclear Regulatory Commission (NRC), with a valid Certificate of Compliance or equivalent certification. The package use must comply with all specified requirements and limitations. Type "B" packages authorized under a Safety Analysis Report for Packaging (SARP) must only be used if the Laboratory is an authorized user of the packaging.

National Security Interest shipments of Type "B" quantities of radioactive materials that do not comply with 10 CFR 71, *Packaging and Transportation of Radioactive Material,* requirements will require an Off-Site Transportation Authorization (OTA) and must include a Transportation System Risk Assessment (TSRA) Contact OS-PT for OTA and TSRA development support.

Line organizations that use Type "B" containers in accordance with a Certificate of Compliance or equivalent certification must have implemented a quality-assurance plan that meets the requirements in 10 CFR 71 Subpart H, *Packaging and Transportation of Radioactive Material, Quality Assurance.* If the line organization has its own plan, it must be reviewed and approved by OS-PT. P&T-PLAN-025, *Quality Management Plan for P&T* (latest revision) (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov) can be referenced and implemented.

- P&T-Plan-028, *Type B Quality Assurance Plan* (current revision).

3.3 Department of Transportation (DOT) Compliant On-Site Hazardous Material Transfers

All P&T activities in support of compliant on-site transfers must meet requirements of FMCSR and DOE Orders.

Personnel performing these activities must be trained and qualified in accordance with the Laboratory HMPT training program.

Refer to Table 1 and Table 2 for guidance on applicable 49 CFR, *Transportation*, requirements.

Refer to Section 3.2 for guidance regarding Type "B" radioactive material packaging.

Emergency information must be communicated to OS-PT before a scheduled transfer.

3.4 Transportation Activities Performed in Accordance With Safety Basis Documents

P&T activities regulated by DOE/NNSA Approved Safety Basis Documents are considered nuclear activities and must comply with additional requirements applicable to Laboratory nuclear activities. The documents noted in Section 3.4.2 form the safety basis. The TSD and the TSR (or an NNSA approved facility DSA that addresses facility transportation activities between TAs and areas within the Laboratory) satisfy the safety basis for the transfer of nuclear materials, which is required by 10 CFR 830 Subpart B, *Department of Energy, Safety Basis Requirements*, for transportation of greater than or equal to Hazard Category (HC)-3 quantities of nuclear materials that are not transported in accordance with the requirements of 49 CFR, *Transportation.*

Refer to Table 1 and Table 2 for guidance on applicable 49 CFR and on-site TSD transfer requirements.

3.4.1 Applicability

Applicability of this section is based on the material categorization descriptions contained in the DOE/NNSA-approved safety-basis documents.

Types of materials applicable to safety basis requirements include:

- non-waste radioactive material,
- radioactive waste,
- tritium,
- radioactive solutions/liquids, and
- other hazardous materials (as deemed necessary).

The material quantities and applicable requirements of the safety basis are:

- P&T transfers with ≥HC-3 quantities of nuclear materials must comply with P&T-TSR-001, *Technical Safety Requirements* (latest revision)
- P&T transfers with <HC-3 quantities of nuclear materials and nonnuclear hazardous materials must comply with P&T-SA-002, *Transportation Safety Document (TSD)*, Chapter 14 (latest revision)
- P&T transfers of explosives moved on roads where public access is restricted, controlled, or denied either through barriers or through controlled access points must comply with DOE M 440.1-1A, *DOE Explosives Safety Manual*, Section 16, *Transportation*, and/or DOE O 461.1A, *Packaging and Transfer or Transportation of Materials of National Security Interest*

Any facility that identifies P&T activities in their NNSA-approved DSA may perform their P&T activities in accordance with their own requirements.

3.4.2 Requirements

Line organizations must implement organization-specific procedures in accordance with the following DOE/NNSA approved safety-basis documents:

- SER TSD.01, *Safety Evaluation Report* (latest revision)
- P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision)
- P&T-TSR-001, *Technical Safety Requirements* (latest revision)

3.5 Transportation of Materials of National Security Interest—Off-Site and On-Site

Laboratory line organizations that propose items of national security interest for (off-site) shipment must submit tie-down procedures with supporting analysis to OS-PT for review and approval. OS-PT will coordinate and obtain NNSA concurrence. Tie-down procedures only require initial approval. If a previously approved tie-down procedure is applicable, line organizations must reference the applicable tie-down procedure.

Laboratory line organizations must submit Transportation Shipping Requests using the form titled *US DOE Office of Secure Transportation—Transportation Services Request* (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov). The initial Transportation Shipping Request must be submitted to OS-PT a minimum of 90 days before the proposed shipment date.

All transport of special assemblies for off-site transportation must have a DOE/NNSA Service Center-issued Off-Site Transportation Authorization (OTA) or an exemption that is granted by the Deputy Administrator for Defense Programs.

Laboratory line organizations that use motor vehicles to transfer items of national security interest off-site or on-site must comply with the applicable FMCSR requirements.

Laboratory line organizations must use government or contractor-owned or leased vehicles to perform NNSA off-site transportation operations of material of national security interest and request OS-PT approval for these operations.

3.6 Packaging and Transportation (P&T) Activities Compliant with Federal Motor Carrier Safety Regulation (FMCSR) and Department of Energy (DOE) Orders

OS-PT administers the program that manages implementation of FMCSR at the Laboratory and is the approval authority for qualifying Laboratory drivers subject to these requirements.

Laboratory line organizations that operate a Government or Contractor vehicle (owned or leased) off-site and on-site in performance of contract activities must comply with applicable regulations of 49 CFR, *Transportation,* FMCSR, and applicable state, tribal, and local regulations not preempted by DOT.

Line organizations must ensure that before transporting quantities of placarded explosives or Highway Route Controlled Quantities of Class 7 Radioactive materials, an approved route plan meeting the requirements of 49 CFR 397 Subpart C, *Federal Motor Carrier Safety Administration, DOT, Routing of Non-Radioactive Hazardous Materials*, and 49 CFR 397 Subpart D, *Federal Motor Carrier Safety Administration, DOT, Routing of Class 7 (Radioactive) Materials*, is properly executed. Contact OS-PT for assistance as needed.

Hazardous Material transport is restricted to drivers who possess a Commercial Driver's License (CDL) with the appropriate hazardous material endorsements. CDL drivers must have on file with OS-PT a Driver Qualification File as described in 49 CFR 391.51, *Federal Motor Carrier Safety Administration, DOT, General Requirements for Driver Qualification Files*.

CDL drivers are subject to drug and alcohol testing under a Laboratory-specific DOT testing program.

A CDL driver's Responsible Line Manager (RLM) is responsible for facilitating an alcohol test within two hours of an accident and a controlled substance test within 32 hours of an accident.

A CDL driver's RLM is required by 49 CFR 382.603, *Federal Motor Carrier Safety Administration, DOT, Controlled Substances and Alcohol Use and Testing, Training for Supervisors,* to have 60 minutes of training on controlled substance use and 60 minutes of training on alcohol misuse.

A CDL driver's RLM is responsible for ensuring that the CDL driver's record of on-duty time is recorded and reviewed to ensure compliance with 49 CFR 395, *Federal Motor Carrier Safety Administration, DOT, Hours of Service of Drivers*. The RLM is responsible for identifying Commercial Motor Vehicles used in his/her operation and coordinating current identification with OS-PT.

Training is required for all drivers subject to FMCSR.

See the OS-PT webpage for additional guidance.

3.7 Transfer Activities for Radioactive Material below the Department of Transportation (DOT)-Regulated Threshold

3.7.1 Applicability of Nonregulated Radioactive Materials

Nonregulated radioactive materials are concentrations and/or consignments that are exempt from FMCSR requirements. Nonregulated radioactive materials must still meet the requirements of P121, *Radiation Protection*. All determinations of both DOT-regulated and unregulated radioactive materials must be performed by HMPT-trained and -qualified personnel. OS-PT will support DOT determinations as required upon request. The shipper must provide characterization data for the material to OS-PT.

3.7.2 Requirements

A Radiological Control Technician must perform receipt surveys of radioactive material, as required by P121, *Radiation Protection*.

A Radiological Control Technician must perform receipt surveys of radioactive material shipments when received at the final destination facility and/or the central shipping and receiving warehouse before the shipping vehicle leaves that facility.

Radioactive material must be packaged so that the package integrity is maintained to prevent the release of contamination during transport; higher-risk materials require more robust packaging. The following packing and transportation factors must be considered:

- the package must withstand anticipated mechanical stresses,
- the package's external contamination must be within limits prescribed by P121,
- the package must not contain any free-standing liquids on the exterior surface of the package, and
- the package must be sealed so as to prevent any leak path into or out of the package.

3.8 Transportation Activities with Special and Unique Requirements

3.8.1 Safeguards and Security Requirements

Laboratory organizations must comply with the Laboratory safeguards and security requirements for off-site transportation and on-site transfers. They must also comply with specific requirements contained in the *LANL SECON Implementation Plan*, including the use of Form 1899, *Heightened Security Transport Request Form*.

3.8.2 Off-Site Transportation of Special Assemblies

Off-site transportation of special assemblies must comply with DOE O 461.1A, *Packaging and Transfer or Transportation of materials of National Security Interest*.

3.8.3 Environmental and Other Samples

All sampling activities must undergo a pre-sampling screening process to evaluate the potential or actual presence of DOT-regulated materials. The screening process will include, but not be limited to, the following:

- a review of appropriate Laboratory operating records and documents from the site, or nearby sites,
- a review of appropriate samples previously taken from the site, or nearby sites, and
- a review of any anecdotal information available about the site.

If the site has been sampled previously, and no hazardous materials are indicated, pre-sampling screening will not be required.

The pre-sampling testing will include, but will not be necessarily limited to:

- For radionuclides (Class 7 Radioactive) using available portable equipment to identify the presence and quantity (if possible) of radionuclides.
- For other hazardous materials, use of appropriate portable equipment and field testing techniques to determine the presence and quantity of hazardous materials.

It is recognized that detailed characterization knowledge of a sample will not be known until the analysis of the sample. However, to support determination of the requirements for sample shipment or transfer from the sampling site, all available information must be considered, and a reasonably conservative approach must be used when categorizing and packaging a sample.

Samples known to contain, or suspected of containing, hazardous materials must be classified, packaged, and transported in accordance with DOT HMRs or the TSD.

Samples subjected to the screening provisions above that do not indicate the presence of regulated hazardous materials are not subject to the requirements of the DOT Hazardous Material Regulations. The waste generator should retain any records or documents that show samples do not indicate the presence of hazardous materials in accordance with P1020-1, *Laboratory Records Management,* and DOE National Archives & Records Administration (NARA) Records Schedules.

The application and results of this methodology for characterization of a sample, and the sampling procedures used to take and control the samples, must be documented and stored as part of a site sampling plan.

3.9 Los Alamos National Laboratory (LANL) Waste Transportation

Off-site shipments and on-site transfers of waste must meet requirements of P930-1, *LANL Waste Acceptance Criteria,* and P930-3, *Off-Site Shipment of Chemical, Hazardous, or Radioactive Waste*.

Effective June 1, 2008, the use of open-top roll-off bins designed to be covered by a tarpaulin will not be allowed for transport of materials to TA-54.

3.10 Receipt of Hazardous Materials from Department of Energy (DOE) Suppliers

All hazardous materials excluding Hazard Class 9 miscellaneous hazardous materials sent to the Laboratory from DOE suppliers must be authorized by the Laboratory before the hazardous material is placed in transit. Authorization is obtained from the OS-PT Service Center through the use of Form 2180, *Hazardous Material/Classified Components Receipt from DOE Facilities* (latest revision), (available from the LANL Forms Center, by calling 664-0765, or by e-mailing lanlran@lanl.gov).

P151-2, *Hazardous Material/Classified Components Receipt from DOE Facilities*, outlines the process and requirements for the receipt of hazardous materials from DOE suppliers.

3.11 Traffic Management

The P&T Program Director provides oversight and guidance to ensure traffic management is conducted as specified in DOE Orders, including the following:

- carrier qualification and selection (general freight, hazardous material shipments, and classified material shipments),
- shipment preparation for domestic and international transport, and
- procurement of commercial transport services, including all related functions such as rate analysis, carrier interface, bill payment, claims, and systems.
- all off-site shipments must be coordinated using the automated transportation management system and must be self-insured. If the shipment qualifies as a special circumstance defined by 48 CFR 47.102, *Federal Acquisition Regulation, Transportation, Transportation Insurance*, contact OS-PT before shipping.
- all commercial bills of lading covering shipments made by or to DOE contractors on DOE's behalf must provide for consignment of the shipment as follows:

  TO: US Department of Energy in care of (name of DOE contractor)

  FROM: LANS, LLC on behalf of the US Department of Energy

- the requirements of DOE O 460.2A, *Departmental Materials Transportation and Packaging Management,* must be met.

4.0 RESPONSIBILITIES

4.1 Packaging and Transportation (P&T) Program Director

- Ensures that the hazardous materials P&T program is in place and that Laboratory organizations performing P&T activities are in compliance with appropriate requirements.
- Delegates roles and responsibilities to OS-PT; however, the P&T Program Director retains all accountability for the Laboratory P&T program.

4.2 Operations Support-Packaging and Transportation (OS-PT)

- Supports the P&T Program Director in administering the Laboratory institutional P&T and FMCSR programs.
- Performs/supports transportation of the following:
  - Materials of national security interest
  - Transfers under the TSD and TSRs
  - Radioactive materials below the DOT regulatory threshold
- Develops, communicates, and implements the Laboratory P&T program policy in compliance with 49 CFR, *Transportation*, DOE Orders, and internal requirements.
- Periodically assesses site organizations to ensure that requirements are understood and implemented.
- Provides Subject Matter Expert (SME) support to Laboratory training organizations in administering the hazardous materials P&T training program.
- Supports Laboratory organizations on P&T activities as requested.
- Develops and maintains the Laboratory P&T program policy and requirements documents.
- Supports Laboratory line organizations with the development of P&T implementing procedures, when requested.
- Reviews and concurs with Laboratory line organizations' implementing procedures.
- Serves as the Laboratory P&T program representative with external organizations, including regulating entities.
- Conveys pertinent changes in regulatory requirements to the Laboratory as they occur.

4.3 Line Organizations

- Ensure that all personnel who support and/or perform packaging, transfer, and transportation operations are trained, qualified, and authorized to perform their assigned functions.
- Develop implementing procedures to meet Laboratory P&T requirements in accordance with an approved Quality Assurance Plan.
- Communicate at an early stage to OS-PT any specific/unique programmatic P&T requirements, including ongoing activities, new campaigns, and outstanding issues.

5.0 IMPLEMENTATION

This document is subject to the Unreviewed Safety Question/Unreviewed Safety Issue (USQ/USI) review as described in Safety Basis Procedure (SBP) 112-3, *Unreviewed Safety Question (USQ) Process*. Therefore, for applicable nuclear, high- and moderate-hazard facilities and accelerators, the requirements in this document are effective December 13, 2010. This allows time to complete the USQ process. If the USQ process cannot be completed by December 13, 2010, the Facility Operations Director (FOD) must seek and obtain an exception or variance from the ADNHHO as described in Section 7.0.

For all other organizations and facilities, the requirements in this document are effective on the issue date.

6.0 TRAINING

The training program must comply with the applicable basic hazardous material training requirements of 49 CFR 172 Subpart H, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Training*. Training for FMCSR and hazardous/radioactive materials P&T activities is provided through the Laboratory training organization. Off-site training may be accepted upon completion of an equivalency determination performed by Laboratory training personnel. Contact OS-PT for information.

OS-PT performance evaluations are required for Laboratory personnel designated as "Authorized Shippers, Packagers, and Drivers." RLMs grant the authority to perform HMPT activities and must coordinate those worker authorizations for P&T functions with the P&T Program Director.

Contact OS-PT for information regarding the Laboratory P&T training program.

7.0 EXCEPTION OR VARIANCE

To obtain an exception or variance to this document, see the following instructions:

- Managers may request an exception or variance from the ADNHHO, through the P&T Program Director.
- At the ADNHHO's request, the P&T Program Director will provide a recommendation or supporting information.
- The ADNHHO or designee will provide the requestor with a written response with a copy to the P&T Program Director.

The requesting organization must maintain the official copy of record of the approved correspondence granting the exception or variance.

8.0 DOCUMENTS AND RECORDS

8.1 Office of Record

The Policy Office is the Laboratory office of record for this institutional document and maintains the administrative record.

OS-PT is the office of record for oversight activities associated with the Laboratory P&T program, including outgoing correspondence and OTA/Off-Site Transportation Certificate (OTC) related documentation.

9.0 DEFINITIONS AND ACRONYMS

9.1 Definitions

See LANL *Definition of Terms*.

9.2 Acronyms

See LANL *Acronym Master List*.

ADNHHO	Associate Director for Nuclear and High-Hazard Operations
CDL	Commercial Driver's License
CFR	Code of Federal Regulation
CMR	Chemistry and Metallurgy Research

DOE	Department of Energy
DOT	Department of Transportation
DSA	Documented Safety Analysis
EOC	Emergency Operations Center
FMCSR	Federal Motor Carrier Safety Regulation
FOD	Facility Operations Director
Hazmat	Hazardous Materials
HC	Hazard Category
HMPT	Hazardous Materials Packaging and Transportation
HMR	Hazardous Materials Regulation
IA	Issuing Authority
IPP	Institutional Policy and Implementation Procedure
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security, LLC
LSA	Low Specific Activity
NARA	National Archives & Records Administration
NNSA	National Nuclear Security Administration
NRC	Nuclear Regulatory Commission
ORM	Other Regulated Material
OS	Operations Support
OS-PT	Operations Support-Packaging and Transportation
OTA	Off-Site Transportation Authorization
OTC	Off-Site Transportation Certificate
P&T	Packaging and Transportation
RLM	Responsible Line Manager
RM	Responsible Manager
RO	Responsible Office
SARP	Safety Analysis Report for Packaging
SBP	Safety Basis Procedure
SCO	Surface Contaminated Object
SECON	Security Condition
SER	Safety Evaluation Report
SME	Subject Matter Expert
SNM	Special Nuclear Material
TA	Technical Area
TSD	Transportation Safety Document
TSR	Technical Safety Requirement
TSRA	Transportation System Risk Assessment
USI	Unreviewed Safety Issue
USQ	Unreviewed Safety Question

10.0 HISTORY

Revision History		
05/30/08	P151-1, Rev. 0	Initial Issue. This document replaces and cancels Institutional Policy and Implementation Procedure (IPP) 525.2, *Hazardous Material (Hazmat) Packaging and Transportation.*
03/29/10	P151-1, Rev. 1	Added requirements to be used when receiving hazardous materials from other DOE facilities. Added flowdown requirements from DOE O 460.2A, *Departmental Materials Transportation and Packaging Management.* Fixed links, titles, and acronyms.
06/01/10	P151-1, Rev. 2	Section 5.0 was revised and updated.
10/05/10	P151-1, Rev. 3	Replaced P&T Form-091, *LANL Authorization to Ship with Form 2180, Hazardous Material/Classified Components Receipt from DOE Facilities.* Referenced P151-2, *Hazardous Material/Classified Components Receipt from DOE Facilities,* for the receipt of hazardous materials from DOE facilities. Deleted requirements under Section 3.10 that are covered in P151-2.

11.0 REFERENCES

Prime Contract:

- Part III, Section J, Appendix G
- 49 CFR 171.1, *Applicability of Hazardous Materials Regulations (HMR) to persons and functions*
- 49 CFR 350–399, *Federal Motor Carrier Safety Regulations*
- DOE O 460.1C, *Packaging and Transportation Safety*
- 49 CFR, *Transportation*
- 49 CFR 171.16, *Detailed Hazardous Materials Incident Reports*
- 40 CFR 302.6, *Environmental Protection Agency, Notification Requirements*
- 49 CFR 172.800, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Safety and Security Plans—Purpose and Applicability*
- 40 CFR 260-299, *Environmental Protection Agency*
- 15 CFR 53.2601-2692, *Toxic Substances Control*
- 40 CFR, *Protection of Environment*
- 49 CFR 173 Subpart C (173.50-173.63), *Shippers—General Requirements for Shipments and Packagings, Definitions, Classification and Packaging for Class 1*
- 49 CFR 172.101, *Table of Hazardous Materials and Special Provisions*
- DOE O 461.1A, *Packaging and Transfer or Transportation of Materials of National Security Interest*
- DOE M 440.1-1A, *DOE Explosives Safety Manual*

- 49 CFR 173.115(a), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (a) Division 2.1 (Flammable Gas)*
- 49 CFR 173.115(b), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (b) Division 2.2 (non-flammable, non-poisonous, compressed gas—including compressed gas, liquefied gas, pressurized cryogenic gas, compressed gas in solution, asphyxiant gas and oxidizing gas)*
- 49 CFR 173.115(c), *Shippers—General Requirements for Shipments and Packagings, Class 2, Divisions 2.1, 2.2, and 2.3—Definitions, (c) Division 2.3 (Gas poisonous by inhalation)*
- 49 CFR 173.120, *Shippers—General Requirements for Shipments and Packagings, Class 3—Definitions, (a) Flammable Liquid*
- 49 CFR 173.124(a), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (a) Division 4.1, (Flammable Solid)*
- 49 CFR 173.124(b), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (b) Division 4.2, (Spontaneously Combustible Material)*
- 49 CFR 173.124(c), *Shippers—General Requirements for Shipments and Packagings, Class 4, Divisions 4.1, 4.2 and 4.3—Definitions, (c) Division 4.3 (Dangerous when wet material)*
- 49 CFR 173.127, *Shippers—General Requirements for Shipments and Packagings, Class 5, Division 5.1—Definition and assignment of packing groups*
- 49 CFR 173.128, *Shippers—General Requirements for Shipments and Packagings, Class 5, Division 5.2—Definitions and types*
- 49 CFR 173.132, *Shippers—General Requirements for Shipments and Packagings, Class 6, Division 6.1—Definitions*
- 49 CFR 173.134, *Shippers—General Requirements for Shipments and Packagings, Class 6, Division 6.2—Definitions and exceptions*
- 49 CFR 173.433, *Shippers—General Requirements for Shipments and Packagings Requirements for determining basic radionuclide values, and for the listing of radionuclides on shipping papers and labels*
- 49 CFR 173.436, *Shippers—General Requirements for Shipments and Packagings, Exempt material activity concentrations and exempt consignment activity limits for radionuclides*
- 49 CFR 173.136, *Shippers—General Requirements for Shipments and Packagings, Class 8—Definition*
- 49 CFR 173.137, *Shippers—General Requirements for Shipments and Packagings Class 8—Assignment of packing group*
- 49 CFR 173.140, *Shippers—General Requirements for Shipments and Packagings, Class 9—Definitions*
- 49 CFR 173.144, *Shippers—General Requirements for Shipments and Packagings, Other Regulated Materials (ORMs)-Definitions*
- 49 CFR 172 Subpart C, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Shipping Papers*
- 49 CFR 172 Subpart D, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Marking*

- 49 CFR 172 Subpart E, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Labeling*
- 49 CFR 172 Subpart F, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Placarding*
- 49 CFR 172 Subpart G, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Emergency Response Information*
- 49 CFR 172 Subpart H, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Training*
- 49 CFR 172 Subpart I, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Safety And Security Plans*, (parts 172.800-804 for highway)
- 49 CFR 173.4, *Shippers—General Requirements for Shipments and Packagings, Small Quantity Exceptions*
- 49 CFR 173.8, *Shippers—General Requirements for Shipments and Packagings, Exceptions for non-specification packagings used in intrastate transportation*
- 49 CFR 173.22a, *Shippers—General Requirements for Shipments and Packagings, Use of packagings authorized under special permits*
- 49 CFR 173.421, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for limited quantities of Class 7 (radioactive) materials*
- 49 CFR 173.424, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for radioactive instruments and articles*
- 49 CFR 173.426, *Shippers—General Requirements for Shipments and Packagings, Excepted packages for articles containing natural uranium or thorium*
- 49 CFR 173.427, *Shippers—General Requirements for Shipments and Packagings, Transport requirements for low specific activity (LSA) Class 7 (radioactive) materials and surface contaminated objects (SCO)*
- 49 CFR 173.428, *Shippers—General Requirements for Shipments and Packagings, Empty Class 7 (radioactive) materials packaging*
- 49 CFR 173.453, *Shippers—General Requirements for Shipments and Packagings, Fissile materials—exceptions*
- 10 CFR 71, *Packaging and Transportation of Radioactive Material*
- 10 CFR 71 Subpart H, *Packaging and Transportation of Radioactive Material, Quality Assurance*
- 10 CFR 830 Subpart B, *Department of Energy, Safety Basis Requirements*
- 49 CFR 397 Subpart C, *Federal Motor Carrier Safety Administration, DOT, Routing of Non-Radioactive Hazardous Materials*
- 49 CFR 397 Subpart D, *Federal Motor Carrier Safety Administration, DOT, Routing of Class 7 (Radioactive) Materials*
- 49 CFR 391.51, *Federal Motor Carrier Safety Administration, DOT, General Requirements for Driver Qualification Files*
- 49 CFR 382.603, *Federal Motor Carrier Safety Administration, DOT, Controlled Substances and Alcohol Use and Testing, Training for Supervisors*
- 49 CFR 395, *Federal Motor Carrier Safety Administration, DOT, Hours of Service of Drivers*

- 48 CFR 47.102, *Federal Acquisition Regulation, Transportation, Transportation Insurance*
- DOE O 460.2A, *Departmental Materials Transportation and Packaging Management*

11.1 Other References

- *P&T Institutional Plan of the Day*
- P&T-SA-002, *Transportation Safety Document (TSD)* (latest revision)
- *LANL Transportation Security Plan* (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov)
- P&T-PLAN-025, *Quality Management Plan for P&T* (latest revision) (available from the P&T Service Center)
- P840-1, *Procurement Quality*
- P101-8, *Explosives Safety*
- P&T-AP-021, *High Explosives Shipment Routing (Chemistry and Metallurgy Research [CMR] TSR-AC 5.6.2)*
- P&T-TSR-001, *Technical Safety Requirements* (latest revision)
- SER TSD.01, *Safety Evaluation Report* (latest revision)
- P121, *Radiation Protection*
- P&T-Plan-028, *Type B Quality Assurance Plan* (current revision)
- OS-PT webpage
- *LANL SECON Implementation Plan*
- P1020-1, *Laboratory Records Management*
- P930-1, *LANL Waste Acceptance Criteria*
- P930-3, *Off-Site Shipment of Chemical, Hazardous, or Radioactive Waste*
- P151-2, *Hazardous Material/Classified Components Receipt from DOE Facilities*
- SBP 112-3, *Unreviewed Safety Question (USQ) Process*
- P311-1, *Creating, Revising, and Cancelling Institutional Documents*

12.0 FORMS

Form 1899, *Heightened Security Transport Request Form*
Form 2114, *Hazard Communication for Radioactive Material Shipments*
US DOE Office of Secure Transportation—Transportation Shipping Request (available from the P&T Service Center by calling 664-0765 or e-mailing pnt@lanl.gov)
Form 2180, *Hazardous Material/Classified Components Receipt from DOE Facilities*
Form 1458, *Excepted Package Form*
Form 1468, *Hazardous Materials Transfer (other than radioactive)*
Form 1586, *Radioactive Materials Transfer*
Form 1586-con, *Radioactive Materials Transfer–Continuation Page*
Form 1686, *Express Document Shipment Request* (for shipping FedEx documents)
Form 1768, *Shipping Request* (for shipping materials)

13.0 ATTACHMENTS

There are no attachments associated with this document.

14.0 CONTACT

Operations Support-Packaging and Transportation Group (OS-PT)
Telephone: (505) 665-8628
Fax: (505) 667-9829
Location: TA-3, Building 30, Room W133E
E-mail: pnt@lanl.gov

Identifier: **EP-DIR-AP-10001** Supersedes: **EP-DIR-SOP-4001, R.5 IPC-1**	Revision: **0**	Los Alamos NATIONAL LABORATORY EST.1943
Effective Date: 9/21/2010	Next Review Date: 9/21/2013	

Environmental Programs Directorate

Administrative Procedure

for DOCUMENT CONTROL

APPROVAL SIGNATURE:

Subject Matter Expert:	**Organization:**	**Signature:**	**Date:**
Gail A. McGuire	IRM-DCS	Signature on File	9/16/10
Responsible Line Manager:			
Gail Toddings	BPS-DO	Signature on File	9/16/10

HISTORY OF REVISIONS

Document No./Revision No.	Issue Date	Action	Description
EP-DIR-AP-10001, R.0	9/21/2010	New Document	• Supersedes EP-DIR-SOP-4001, R.5 IPC-1. Changed from Standard Operating Procedure (SOP) to Administrative Procedure (AP) based on Procedure Categories in Rev. 1 of Conduct of Ops Manual, P315. • Removed PCR, incorporated Document Action Request (DAR) form from P315, R1, and updated Verification Checklist per P315, R1.
EP-DIR-SOP-4001, R.5, IPC-1	5/13/2010	Revision to EP-DIR-SOP-4001, R.5	Changes made to add reference to DCC Contact List on ADEP Website; replaced references to EP Directorate with ADEP. Improved and modified Attachment 2.
EP-DIR-SOP-4001, R.5	11/19/09	Revision to EP-DIR-SOP-4001, R.4	Changes made to reflect current processes for "signature on file" practices for document review and approval and periodic review responsibilities for Document Control Custodians.
EP-DIR-SOP-4001, R.4	5/5/08	Revision to EP-DIR-SOP-4001, R.3	Changes made to clearly identify roles and responsibilities between the Document Owner and The Document Control Custodian.
EP-DIR-SOP-4001, R.3	7/11/07	Revision to EP-DIR-SOR-4001, R.2	Changes made to meet EP QAP requirements.
EP-DIR-SOP-4001, R.2	4/9/07	Revision to EP-DIR-SOR-4001, R.1	Change all EWMO Conduct of Operations Manual references to LANL Conduct of Operations.
EP-DIR-SOP-4001, R.1	3/28/07	Revision to EP-DIR-SOR-4001, R.0	Incorporate ISD 315-1, Conduct of Operations Manual requirements.
EP-DIR-SOP-4001, R.0	2/22/07	Superseded QP-4.5, DIV-AP-0107, AP-WFM-002, and AP-WFM-029.	Incorporate Environmental and Waste Mgmt. Facility Ops (EWMO) & Environmental Remediation Support Services (ERSS) Document Control processes for the EP Directorate.

1.0 PURPOSE AND SCOPE

The purpose of this procedure is to describe the formal process for controlling and distributing controlled documents within the Environmental Programs Directorate (ADEP) in order to ensure that only the latest revisions of documents are available for use in accordance with P1020-2, *LANL Document Control Program,* and EP-DIR-QAP-0001, *Quality Assurance Plan for the Environmental Programs Directorate,* and P315, *Conduct of Operations Manual.*

This procedure allows for the development and implementation of additional lower tier documents, including procedures, plans, instructions and guides, which may be required to satisfy customer requirements for a specific site, project, or facility. While these lower tier documents must invoke the requirements of EP-DIR-AP-10001, they may be developed to present additional details and guidance to document control centers that are established to support these specific areas.

2.0 BACKGROUND AND PRECAUTIONS

2.1 Background

Documents that specify or prescribe quality requirements or activities affecting quality (e.g., instructions, procedures, and drawings) are controlled and distributed to assure that correct documents are being employed. Controlled documents, including revisions thereto, shall be reviewed for adequacy and approved for release by authorized personnel. The following controls shall be applied to documents and revisions thereto:

a) controls for the identification of controlled documents and uncontrolled documents;

b) controls for the specified distribution of controlled documents for use at the appropriate location;

c) controls to assure adherence to a defined change process;

d) controls for the review of the controlled Document History File for completeness and the approval prior to distribution; and

e) controls to ensure the correct documents are provided for use.

The Responsible Line Manager approves and prescribes documents for use. Management must identify for workers the version of the document approved for use and required for compliance during current and planned work activities. During non-work hours, to meet operational needs, the Shift Operations Manager or their designee may develop and issue a controlled document for use after obtaining the necessary approval signatures as outlined in this procedure. On the next scheduled workday, the Shift Operations Manager or designee will notify the assigned Document Control Custodian who will then process the document in accordance to this procedure.

2.2 Precautions

Individuals who print documents from the EP controlled document website must verify the most current version before use, and the document must be marked as a "Working Copy," and the date and time recorded with the individual's initials.

2.3 Definitions

2.3.1 **Approval Date** — the date of the Responsible Line Manager's signature.

2.3.2 **Cancellation** — term used to permanently remove a procedure from the document control system. Cancelled procedures cannot be reactivated.

2.3.3 **Deactivation** — used to temporarily remove a procedure from the document control system to prevent use during a process or facility shutdown. Deactivated procedures are exempt from periodic reviews.

2.3.4 **Controlled Distribution** — the process used to issue and ensure receipt of controlled documents.

2.3.5 **Controlled Document** — a document, or any part thereof, that is prepared, reviewed, issued, revised, and approved in accordance with established protocol and subject to controlled distribution and to defined change process. ADEP procedures are issued as controlled documents. Controlled documents and forms are controlled to ensure that correct and current documents are used and referenced.

2.3.6 **Controlled Document Receipt Acknowledgement Form** — a form accompanying a hard copy controlled document to confirm receipt of the document.

2.3.7 **Distribution List** — a list that indicates the recipients of a controlled document electronic or hard copy notification.

2.3.8 **Document History File** — the document and any documentation associated with the review and approval process for that document.

2.3.9 **Effective Date** — the date (after approval date) that a document is made available for use by the Responsible Line Manager and when the document is required to be fully implemented. The effective date is determined by the Responsible Line Manger or designee.

2.3.10 **Electronic Notification** — an electronic message to training staff and affected personnel that there is a new, revised, deactivated, or cancelled controlled document.

2.3.11 **Major revision** — a document change that affects basic process variables, personnel safety, process or equipment protection; changes that involve nuclear safety review considerations, or add/delete a hold/witness point. Document cannot be correctly performed as written without the change. It is the document preparer's responsibility to determine the level of revision (i.e., minor or major).

2.3.12 **Master File of Controlled Documents** — the compilation of the native file electronic copies of active controlled documents, maintained by the Document Control Custodian (DCC) for ADEP.

2.3.13 **Minor revision** — Minor revisions will not prevent proper performance of the document as written. Minor revisions may include additional steps that do not change the intent or scope of the document. Minor revisions are not used where the change would:

- Increase the safety risk to personnel,
- Alter a source document requirement,
- Alter the purpose or scope of the document,
- Eliminate any required reviews or approvals, or
- Alter the operating, technical, design, process, regulatory, or quality control requirements of a document.

2.3.14 **Original** — the ink-signed master hard copy of a document

2.3.15 **Procedure** — a written statement, description, or instruction governing how work is to be accomplished. A procedure specifies how LANL workers shall implement policies or requirements.

2.3.16 ***/s/*** — this symbol is used to indicate that a signature is on file, either via e-mail or by an actual signature.

2.3.17 **Uncontrolled Copy** — a hard copy of a controlled document used for information purposes ONLY, and usually indicated on the procedure cover sheet as either **Working Copy** or **Information Only,** initialed and dated.

2.3.18 **Working Copy** — a hard copy of a controlled document that is printed from the EP controlled documents website, obtained from a Document Control Analyst (DCA), or otherwise obtained as outlined in this document (e.g., OM), and that is used for completing work activities. A working copy must be marked as a working copy, and the date and time recorded with the individual's initials.

3.0 EQUIPMENT AND TOOLS

None.

4.0 STEP-BY-STEP PROCESS DESCRIPTION

4.1 Identification of Controlled Documents

4.1.1 Types of EP documents to be controlled including, but not limited to, the following:

- ***Administrative Procedures (APs)***
- ***Building Emergency Plans (BEPs)***
- ***Engineering Design Documents***
- ***Quality Assurance Plan (QAPs)***
- ***Quality Program Implementing Matrices (QPIMs)***
- ***Procedures (e.g., SOPs or DOPs)***
- ***Safety Basis documents***
- ***Integrated Work Documents (Some organizations track their own IWDs. Therefore, it is not mandatory that IWDs are controlled by the DCC.)***

4.2 Responsibilities

Document Preparer or Designee	**NOTE**:	It is the document preparers' responsibility to ensure that document numbers are obtained from a DCA. This will ensure document numbering consistency throughout the directorate and the history of the document will be maintained. DCC contacts are available on the ADEP website.

1. For new documents and revised documents:

   Request a controlled document number from a DCA according to the ADEP Document Numbering Guide. If a revised document replaces or supersedes an existing document it will be noted on the Document Action Request (DAR) form and must be included in the revision history. The superseded document will then be removed when the new document is effective.

2. For Major Revision:

   - Contact a DCA to ensure consistency of document number use.
   - Retrieve native file from Domino, if possible. If not, request an electronic copy from the DCA.

   For a Minor Revision:

   - Contact a DCA to ensure consistency of document number use.
   - Retrieve native file from Domino, if possible. If not, request an electronic copy from the DCA.

   For Immediate Procedure Change (IPC):

   - Process in accordance with LANL Conduct of Operations Manual (P 315, Attachment 16, *Technical Procedures*).
   - The procedure owner determines if procedure needs to be revised based on a single IPC.
   - An IPC log is used to track IPCs from initiation and approval until entered into document control.

   NOTE: The reviewer will provide concurrence documentation to the Requester using one of the following methods:

   - Signed Review Comment Sheet with No Comment indicated; or
   - Signed Review Comment Sheet indicating concurrence with comment resolutions; or
   - Email to the requestor stating concurrence with the specified document; or
   - Signed and dated document (e.g., memorandum) to the Requester stating concurrence with the specified document.

   Review comments **may** be provided using the Procedure Review and Concurrence Form (see P 315, Conduct of Operations Manual), redline markup of the document, or other method agreed upon by the Document Preparer and Reviewer.

3. Prepare the document in accordance with the *Conduct of Operations Manual* or an organization's approved Document Development procedure.

   Obtain a classification review by a derivative classifier (DC), if there are any questions regarding the classification of any draft document per P204-1, *Controlled Unclassified Information*. Per the Designated Unclassified Subject Areas (DUSA) *DUSA User Guide,* a document within the scope of a DUSA need not (and will not) be reviewed for classified and controlled unclassified information (CUI) content.

4. Compile the Document History File, which includes the following:

   - a completed Document Action Request (DAR) Form which includes approval signatures from the Responsible Line Manager and Additional Approval Signatures, as required, Unreviewed Safety Question (USQ), superseded document, etc.; as applicable;
   - a final hard copy document with original signatures and effective date on cover sheet;
   - Procedure Review and Concurrence Form or other approved documented concurrence. This includes all documentation associated with the review and approval process of the document (e.g., e-mail or signatures on DAR);
   - Completed Procedure Validation Checklist, if applicable;
   - Checklist for Procedure Writer's Verification of Written Correctness, if applicable.

   NOTE: If the Document History File is incomplete, it will be returned to the document owner for correction. This step could delay its availability on the EP controlled document website. Due to the geographic locations of employees within the directorate, it is acceptable to accept an e-mail from employees in lieu of actual signature(s) on the DAR or Review and Concurrence Form. This will be documented with /s/ on the form(s).The DCA ensures that e-mails are submitted and maintained in the Document History File.

5. Submit the following to the DCA. (Allow three working days for DCA to upload to EDMS, except with prior approval of the DCA) :

   - final hard copy with original approval signatures;
   - the Document History File;
   - EP Controlled Document Quality Verification Checklist (Attachment 1);
   - an electronic, native file, "Word" version of the final document which includes any forms and attachments;
   - a separate electronic, native file, copy of the final forms; as applicable.

   Training Documents are handled as follows:

   - Documents for training purposes must be approved with a complete Document History File, watermarked, and no effective or review date. If the document is for training purposes only, it will then be noted on the history of revisions page and on the document header.
   - When the training document is ready for removal from the training status, a written notification (e.g. an e-mail) will be sent with effective and review dates to the DCA instructing them to activate the document.
   - Training documents which are activated will maintain the revision number which was last used on the training document.
   - Immediate Procedure Changes are provided to the DCA either electronically or on a current copy of the affected procedure. The IPC number will be identified on the DAR by the document owner. The changes must be clear and legible and will remain so when reproduced.

Document Control Custodian	1.	Review the Document History File for completeness, including: • original approval signatures; • the hard copy version of the document and any forms are included; and • electronic, native file, copies of final document and electronic file of forms, if applicable, have been received.
	2.	Perform and sign the EP Controlled Document Quality Verification Checklist – Attachment 1.
	3.	Save the Word version of document, this will include forms and attachments.
	4.	Save document as PDF.
	5.	Scan the original cover sheet and DAR Form.
	6.	Replace the cover page of the associated PDF document.
	7.	Upload the PDF document and enter document information in the EP controlled document website. Enter document information in Document Details.
	8.	Notify the Web Master when posting documents to the EP controlled document website and insert training links as applicable.
	9.	When documents are posted, send electronic notifications or Controlled Document Receipt Acknowledgement forms, as applicable, to the affected ADEP personnel.

4.3 Document Control Files

Document Control Custodian	1.	Submit a complete Document History File to the Records Processing Facility (RPF) immediately after uploading the document into the document control system in accordance with EP-DIR-SOP-4004, *Record Transmittal and Retrieval Process.*

4.4 Document Distribution

Document Preparer or Designee	1.	Notify DCA when a hard copy controlled document is required for a particular site. The requestor will provide the DCA with a distribution list (e.g. e-mail). Controlled hardcopies are issued only when a documented request is received.

Operations Manager or Designee	2.	If the normal controlled distribution methods are not available and a new or revised document must be issued, issue the document as follows: • Print the required document from a controlled document source (e.g., EWMO Facility Procedure Manuals). It is the Operation's Manager's or designee's responsibility to ensure that the controlled document source contains current documents at all times; • Identify distribution list; • Mark the document cover sheet as a controlled copy –"Controlled Copy" and initial and date/time the cover sheet; • On the next scheduled work day, notify the assigned Document Control Custodian of the issued "Controlled Document" and associated distribution information. The DCA will then process the document in accordance with this procedure.
Document Control Custodian	1.	Issue controlled hardcopies of approved documents on an as-requested basis.
	2.	A. Retrieve the document from the EP controlled document website. Each controlled copy will be issued a unique, controlled number. B. Generate a Controlled Document Receipt Acknowledgement Form, which includes instructions on how to handle new or revised documents and the date the receipt is due back to the DCA. The Controlled Document Receipt Acknowledgment Form will be created by the DCA. C. Track the Controlled Document Receipt Acknowledgement Forms, and update the system when it has been returned.
Controlled Document Holder		D. Failure to return the Controlled Document Receipt Acknowledgement Form within the specified time requested could result in the removal of the individual from the controlled distribution list.
EP Personnel	1.	Obtain electronically controlled documents by accessing the EP controlled document website. Printed documents from the EP controlled document website are considered working copies and must be verified each day before use. The "working copies" are to have the date/time recorded on them and initialed by the individual printing the document. If it is an uncontrolled copy, mark it as "Uncontrolled or Information Only". **NOTE**: Users are responsible for ensuring that they are working to the latest approved revision of documents.
	2.	Dispose of obsolete or superseded documents in the workplace to ensure they are not used to perform work.
Document Control Custodian	3.	Send electronic notifications when documents are issued, revised, or cancelled to the affected ADEP personnel.

4.5 Document Periodic Review Notifications

Document Control Custodian	1.	Monitor the status of periodic review schedules for active controlled documents.
	2.	Notify the Responsible Line Manager, Document Owner and Procedure Development Office 30, 60, and 90 days before the periodic review date is due.
Document Preparer	1.	Review documents by designated revision due date.
	2.	If revision is required, revise in accordance with this procedure. (In WDP preparer coordinates reviews with the procedure writer's team. In ADEP preparer coordinates review with the BPS Procedure Development team.)
	3.	If a revision is not required, complete the Conduct of Operations, Documentation of Periodic Review form.
	4.	Submit Documentation of Periodic Review form to Document Control Custodian.
	5.	DCC places Periodic Review form image in front of the associated document.
	6.	Reset periodic review due date.

4.6 Deactivation/Cancellation of Controlled Documents

Document Preparer or Designee	1.	If a controlled document is being deactivated or cancelled, a DAR must be completed. Approval signatures must include the following, at a minimum: • Responsible Line Manager • Quality Assurance Team Leader if procedure implements the requirements of QAP • USQ, as applicable • Document Owner Supervisor
	2.	Submit the completed DAR form to the DCA.
Document Control Custodian	1.	Check the DAR Form to ensure the document deactivation or cancellation contains approval signatures.
	2.	Update the controlled document system indicating deactivation or cancellation of the document.
	3.	Remove document and any associated forms from the EP active controlled document website.
	4.	Send electronic notifications when documents are deactivated or cancelled to the affected ADEP personnel.

4.7 Records

DCC	1.	Submit the following documents generated from this procedure to the Records Processing Facility in accordance with EP-DIR-SOP-4004, *Record Transmittal*

and Retrieval Process:

- each revision of controlled documents;
- the Controlled Document Receipt Acknowledgement Forms; and
- the complete document history file.

5.0 ATTACHMENTS

Attachment 1: Quality Verification Checklist

Using a CRYPTO Card, click here for "Required Read" credit.

If you do not possess a CRYPTOCard or encounter problems, contact the EP Central Training Office.

ATTACHMENT 1: EP DOCUMENT CONTROL—QUALITY VERIFICATION CHECKLIST

Document No.: _____ **Revision No.:** _____
Title: _____

Responsible Organization	Verified by Doc Control	*(All rows must be completed or marked "N/A")*
EP Documents		☐ N/A ☐ New Document ☐ Revision ☐ Major Change ☐ Minor Change
☐	☐	Ensure DAR form is the current revision.
☐	☐	Original approval signatures and dates are on the DAR forms.
☐	☐	Blanks are filled in or marked "N/A." Any corrections are lined through, initialed, and dated.
☐	☐	Signatures must be obtained where required [if /s/ is used, original signature(s) or email(s) *must* be included in the document history file].
☐	☐	Documented evidence of review and concurrence is required for all individuals identified on the DAR form. Include a completed Procedure Review and Concurrence form.
☐	☐	Original approval signature has been obtained. Effective date does not precede approval date. Review date is identified.
☐	☐	Verify the correspondence of DAR form with the cover sheet and headers (i.e., title, document number, revision number, effective date, and page count).
☐	☐	Procedure Validation Checklist is completed, if applicable.
☐	☐	Procedure Writer's Verification of Written Correctness is completed, if applicable.
☐	☐	Formality of Operations Procedure Implementation Checklist is completed, if applicable.
☐	☐	Email the electronic version of the final document to Document Control. [If applicable, a separate electronic file of the final fill-able form(s) to be posted separately is attached.]
CCP Documents		☐ N/A
☐	☐	Ensure the DAR form is the current revision.
☐	☐	Original approval signatures and dates are on the DAR forms.
☐	☐	Blanks are filled in or marked "N/A." Any corrections are lined through, initialed, and dated.
☐	☐	Signatures must be obtained where required [if /s/ is used, original signature(s) or email(s) *must* be included in the document history file].
☐	☐	Email the electronic version, if applicable, to Document Control. (Document may also be obtained from the LANL Pending file.)
Standing Orders		☐ N/A
☐	☐	Original approval signature and date are included.
☐	☐	Original Unreviewed Safety Question (USQ) Review signature is included.
☐	☐	Original Derivative Classifier Review signature is included.
☐	☐	Email the electronic version of the final document to Document Control. [If applicable, a separate electronic file of the final fillable form(s) to be posted separately is attached.]
Cancellations		☐ N/A
☐	☐	Ensure DAR form is the current revision.
☐	☐	Original approval signatures and dates are on DAR forms.
☐	☐	Signatures must be obtained where required [if /s/ is used, original signature(s) or email(s) *must* be included in the document history file].
☐	☐	Blanks are filled in or marked "N/A." Any corrections are lined through, initialed, and dated.

Completed by: _____ / _____ / _____ / _____ / _____
Print Name Organization Phone No. Signature Date

DC Verification: _____ / _____ / _____
Print Name Signature Date

ATTACHMENT 1: EP DOCUMENT CONTROL — QUALITY VERIFICATION CHECKLIST

Document No.: _____ Revision No.: _____

Title: _____

Responsible Organization	Verified by Doc Control	*(All rows must be completed or marked "N/A")*
EP Documents		☐ N/A ☐ New Document ☐ Revision ☐ Major Change ☐ Minor Change
☐	☐	Ensure DAR form is the current revision.
☐	☐	Original approval signatures and dates are on the DAR forms.
☐	☐	Blanks are filled in or marked "N/A." Any corrections are lined through, initialed, and dated.
☐	☐	Signatures must be obtained where required [if /s/ is used, original signature(s) or email(s) *must* be included in the document history file].
☐	☐	Documented evidence of review and concurrence is required for all individuals identified on the DAR form. Include a completed Procedure Review and Concurrence form.
☐	☐	Original approval signature has been obtained. Effective date does not precede approval date. Review date is identified.
☐	☐	Verify the correspondence of DAR form with the cover sheet and headers (i.e., title, document number, revision number, effective date, and page count).
☐	☐	Procedure Validation Checklist is completed, if applicable.
☐	☐	Procedure Writer's Verification of Written Correctness is completed, if applicable.
☐	☐	Formality of Operations Procedure Implementation Checklist is completed, if applicable.
☐	☐	Email the electronic version of the final document to Document Control. [If applicable, a separate electronic file of the final fill-able form(s) to be posted separately is attached.]
CCP Documents		☐ N/A
☐	☐	Ensure the DAR form is the current revision.
☐	☐	Original approval signatures and dates are on the DAR forms.
☐	☐	Blanks are filled in or marked "N/A." Any corrections are lined through, initialed, and dated.
☐	☐	Signatures must be obtained where required [if /s/ is used, original signature(s) or email(s) *must* be included in the document history file].
☐	☐	Email the electronic version, if applicable, to Document Control. (Document may also be obtained from the LANL Pending file.)
Standing Orders		☐ N/A
☐	☐	Original approval signature and date are included.
☐	☐	Original Unreviewed Safety Question (USQ) Review signature is included.
☐	☐	Original Derivative Classifier Review signature is included.
☐	☐	Email the electronic version of the final document to Document Control. [If applicable, a separate electronic file of the final fillable form(s) to be posted separately is attached.]
Cancellations		☐ N/A
☐	☐	Ensure DAR form is the current revision.
☐	☐	Original approval signatures and dates are on DAR forms.
☐	☐	Signatures must be obtained where required [if /s/ is used, original signature(s) or email(s) *must* be included in the document history file].
☐	☐	Blanks are filled in or marked "N/A." Any corrections are lined through, initialed, and dated.

Completed by: _____ / _____ / _____ / _____ / _____

Print Name Organization Phone No. Signature Date

DC Verification: _____ / _____ / _____

Print Name Signature Date